

Feral Ecologies:
A Foray into the Worlds of Animals and Media

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Abstract

This dissertation wonders what non-human animals can illuminate about media in the visible contact zones where they meet. It treats these zones as rich field sites from which to excavate neglected material-discursive-semiotic relationships between animals and media. What these encounters demonstrate is that animals are historically and theoretically implicated in the imagination and materialization of media and their attendant processes of communication.

Chapter 1 addresses how animals have been excluded from the cultural production of knowledge as a result of an anthropocentric perspective that renders them invisible or reduces them to ciphers for human meanings. It combines ethology and cinematic realism to craft a reparative, non-anthropocentric way of looking that is able to accommodate the plenitude of animals and their traces, and grant them the ontological heft required to exert productive traction in the visual field.

Chapter 2 identifies an octopus's encounter with a digital camera and its chance cinematic inscription as part of a larger phenomenon of "accidental animal videos." Because non-humans are the catalysts for their production, these videos offer welcome realist counterpoints to traditional wildlife imagery, and affirm cinema's ability to intercede non-anthropocentrically between humans and the world. Realism is essential to cinematic communication, and that realism is ultimately an achievement of non-human intervention.

Chapter 3 investigates how an Internet hoax about a non-human ape playing with an iPad in a zoo led to the development of "Apps for Apes," a real life enrichment project that pairs captive orangutans with iPads. It contextualizes and criticizes this project's

discursive underpinnings but argues that the contingencies that transpire at the touchscreen interface shift our understanding of communication away from sharing minds and toward respecting immanence and accommodating difference.

Finally, Chapter 4 examines a publicity stunt wherein a digital data-carrying homing pigeon races against the Internet to meet a computer. Rather than a competition, this is a continuation of a longstanding collaboration between the carrier pigeon and the infrastructure of modern communications. The carrier pigeon is not external but rather endemic to our understanding of communication as a material process that requires movement and coordination to make connections.

Dedication

To all the animals I've ever encountered for bringing curiosity and wonder into my life, and who, with their strange, creaturely splendours, baited me into pursuing the big questions.

Acknowledgements

It is commonly (and at times, infuriatingly) said that the best dissertation is a done dissertation. Now that it's finished, this certainly feels true. At the same time, however, this platitude emphasizes the destination over the journey and the final form over the conditions of its production, ultimately giving short shrift to the painstaking process by which this project came to be. No doubt, the fine details of this exercise will only flatten and dull over time, until they eventually recede into obscurity. The following acknowledgements are meant to serve as a record of the process, a reminder that the means were just as valuable as the end result.

This dissertation took a long time to come to fruition. I didn't come to the Ph.D. with a particular project in mind. In hindsight, however, it feels like it was always incubating; it merely remained unarticulated and inchoate until the right conditions allowed it to finally crystallize. This process of crystallization was an incredible learning experience for me, illuminating not only the murky and maddening task of writing, but the constellation of factors that ultimately makes writing possible at all.

Sure, there is something to be said for discipline, for committing to the writing, for willing oneself to simply sit down and write. This is often a luxury, however, and far easier said than done. To write requires focus which in turn demands a canny ability to be able to battle the constant and forceful distractions that constitute the realities of everyday life. It necessitates discipline but also the privilege to sequester oneself, and give oneself completely over to the writing. And then, even if one is able to successfully sustain such a retreat, it can have an equally detrimental effect. By spending too much time with the writing, and withdrawing too deeply for too long into thought, one runs

the risk of becoming unmoored, and getting distracted in a different kind of way. It is a precarious balancing act.

As such, one must learn how to live with and around the writing, when and how to take breaks from it, and to create and protect enough space to contemplate, to ruminate, to make connections, and develop them. No matter how quickly the ideas are planted or how diligently and committed one is to their development, they will not grow without the proper conditions. All of this to say, this has been a very challenging and enlightening experience. Not just to write such a lengthy project for such a protracted period, but to figure out how to best cultivate and nurture the conditions for its becoming.

First and foremost, I want to express my deep gratitude to Jay for living patiently with me and my writing all these years. For letting me be when I yearned to be alone to collect my thoughts, and for being there, listening attentively when I needed to talk through my ideas. And finally, for outfitting me with the physical and technical supports I required to be able to write in the first place.

In order to think deeply and write lucidly, I've discovered that my environment must disappear, retreat from my senses, and into quotidian dormancy. This makes writing particularly tricky, and I am eternally grateful for our cozy apartment at 14 Raglan for housing me all these years. For the most part, it provided me with a tranquil and quiet space to work, while enabling me to live in, with, and through that work. Thanks also, to our neighbors, known affectionately as the 14/16 Raglan crew, who made me feel at home, and tethered me to a community from the very night I arrived in Toronto.

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Writing requires a great deal of solitude, including extended periods of withdrawal from social life. This withdrawal is necessary and fruitful, but also exceptionally grueling. It is best done on the pretense that there is a community in which to return. In this regard, I want to thank my fellow graduate students who were there for me in varying capacities over the years, in classes we attended or TA-ed together, at GSA meetings, at conferences, or at a myriad of talks, mixers, and other extracurricular activities.

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Introduction

Setting the Scene: The Animal-Media Event in the Visual Field

the intermedia network of cinema, television, radio, magazines, books, and newspapers is our environment, a service environment that carries the messages of the social organism. It establishes meaning in life, creates mediating channels between man and man, man and society.

–Gene Youngblood, from “The Intermedia Network as Nature” in *Expanded Cinema* (54).

Should we not learn the lesson that, for example, the woods, which poets praise as the human being’s loveliest abode, is hardly grasped in its true meaning if we relate it only to ourselves? [...] The meaning of the forest is multiplied a thousandfold if one does not limit oneself to its relations to human subjects but also includes animals.

–Jakob von Uexküll, from “A Theory of Meaning” in *A Foray Into the Worlds of Animals and Humans* (142).

I. A Squirrel on the Internet

Andrew Blum was unable to get on the Internet one day, because a squirrel was already on it. In the backyard of his New York apartment, the troublesome rodent was intermittently chewing on the cable that brought the Internet into his home, disrupting his Internet service. Up until that moment, the journalist confesses, the Internet as a thing, “a ‘thing’ that squirrels can nibble at,” had escaped him (2). All this time he had taken it for granted as a nebulous space he accessed solely through his digital devices. It was seemingly separate from his immediate physical surroundings, as if the screen before him was opaque, and demarcated a “solid border between dimensions...the virtual world and the physical world, cyberspace and real places, and never the two shall meet” (Blum 4). The incident made such an indelible impression on Blum that it served as the catalyst for a more extensive investigation of the network’s physical

infrastructure, which he documented in his book, *Tubes: A Journey to the Center of the Internet*.

The squirrel's tiny, anarchic gesture was, then, more than a mere annoyance; it was revelatory. The squirrel's touch awakened Blum to the existence of a whole other part of the Internet. As Blum describes it, it was as though the squirrel nudged open "the door to a previously invisible realm behind the screen" (4). This realm constituted a different kind of digital domain, one where coaxial and fiber optic cables stretch across the sky, tunnel underground, and span the ocean floor, meet up in droning data centres, and convene in the dry heat of server farms. The animal encouraged Blum to acknowledge, for the first time, the expansive infrastructure and inextricable materiality of the world's largest communication network. Blum, newly attuned to the Internet's real conditions of existence, learned that the Internet—where it is, what it is, what it looks like, and how it both connects and constitutes worlds—exists beyond his own familiar human phenomenal experience of it.

As this little anecdote suggests, our understandings of media are informed by our experiences, and these experiences are limited. The phenomenology and consciousness of the individual human subject only grant partial access to what media are, what they do, and how and why they matter. Media exceed our grasp: they exist in excess of how we sense, perceive, and use them. This pronounced gap in our threshold, rather than an impediment, presents a challenging and exciting opportunity to explore the foreign territory of the media landscape, beyond its familiar façade. It is also an occasion to experiment with alternative methods for producing knowledge beyond the circumscribed humanist paradigm. It offers a chance to explore neglected connections

and fashion fresh insights about media and their world-binding processes of mediation and communication.

To effectively take up such a gauntlet, however, requires an experienced and available guide. Though not immediately obvious, these guides are easy to find—Andrew Blum unexpectedly found his as close as his own backyard. At the meeting point of technology, animals not only gesture toward the secret worlds of technology, they also reveal those worlds to be deeply entangled with their own. After all, the concealed, intricately wired world of the Internet was not the only thing the rodent allowed Blum to glimpse on that fateful winter's day. It offered him a peek into the online world of the squirrel. Sure, the Internet is part of Blum's everyday life: integrated into his living environment, it provides near-seamless functional support for his day-to-day activities. But it is equally a part of the squirrel's everyday life, a fixture of varying degrees of importance in its surroundings.

It is presumably a major thoroughfare across which it scurries from one end of the yard to the other. It offers the rodent an advantageous overhead view of its territory so that it may ensure the protection of its food caches and keep an eye on emerging predators. It is also a prime location from which it can make warning calls to its neighbours when it senses danger. Finally, it is an opportune means for it to clean and trim its teeth. Blum and the squirrel get on the Internet every day; it may not look like the same Internet, but it is. Human and rodent merely prioritize different qualities of that Internet, based on their unique perceptual capacities and their respective needs and inclinations. As a result, the Internet's form and function come to mean different things to them, and the medium itself manifests to them in diverging but equally legitimate ways.

Animals, because of their particular non-human capacities for perception and action, then, can direct our attention to neglected aspects of media. The most important lesson they impart is that media technologies—whether it be their hardware or software, interfaces or infrastructures—though ostensibly made by and for humans, are nonetheless worldly phenomena, existing in and constitutive of many more-than-human worlds. They can contain and carry meaning, introduce environmental possibilities, and create new living conditions for non-human beings as much as human ones. Humans are not the only creatures to make their selves at home in the world; non-human animals do as well. They tinker with their environment. They probe its potentials and its limits in order to make it, albeit provisionally, something else: a place of temporary accommodation for their possible lives.

If we follow animals with some measure of trust and careful attention, we can find ourselves confronted with surprisingly significant vistas of knowledge heretofore unexplored. Not only about other techniques of being, knowing, and world making, but also about the material, relational, and conceptual aspects of media that are typically veiled by the human subjective blind spot. These aspects can, in turn, recalibrate our understanding of media and the process of communication.

II. The Question Concerning Technology, With Animals

Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it.

—Martin Heidegger, from “The Question Concerning Technology” (35).

Studying media technologies at the sites of their encounters with animals is a relatively novel approach, but not entirely unprecedented. After all, it was the “chance juxtaposition” of a nuclear reactor and a California Gray Whale that comprised the unseemly vista that catalyzed and crystallized Langdon Winner’s now seminal philosophical meditation on modern technology. In the concluding chapter of *The Whale and the Reactor*, Winner confesses that it was the shock of seeing them together in the Diablo Canyon on that day, that set astir a powerful Manichean fascination he could not ignore. The whale and the reactor,

were two tangible symbols of the power of nature and of human artifice: one an enormous creature swimming gracefully in a timeless ecosystem, the other a gigantic piece of apparatus linked by sheer determination to the complicated mechanisms of the technological society. The first offered an image of things as they had always been, the other an image of things as they were rapidly coming to be. (168)

Here, Winner’s juxtaposition of animals and technology becomes a productive way to address the deeper relationship between nature and technology, a relationship that was for Martin Heidegger, fundamental and formative to our understanding of and engagement with the world.

This dissertation’s decision to focus on animal-media encounters is inspired largely by Heidegger. Technology’s encounter with nature provides the very fulcrum of his influential essay, “The Question Concerning Technology,” where he argues that the conditions and consequences of nature’s encounter with culture must be addressed if we are to truly appreciate technology’s existential significance. Technology, he persistently implores, is implicated in how the world discloses itself to us, while also creating the very conditions by which our being encounters that world. For him, technology is not some separate phenomenon added to the experience of the world, but a constitutive

process of the world's coming into being. It creates the very vectors of possibility for the world's becoming, the consequences of which invariably come to bear on human being, doing, and knowing.

Understanding technology is of utmost importance, Heidegger claims, not only because of its rapidly increasing ubiquity, but also because of the ease at which it is assimilated into everyday life. He was responding to the acceleration of technological change in the 20th century and the resulting accumulation of technologies in the lived environment. These technologies were significantly and rapidly transforming our experience and understanding of the world. He feared, just as Winner worried decades later, that we were becoming “technological somnambulists wandering through an extended dream” (169). That is, that we were taking these changes for granted, allowing them to transpire, unchecked.

At issue for Heidegger is not simply the pervasiveness of technology, then, but the way it conceals itself and its operations from us, while we become captivated by its accessibility, convenience, and functionality. Whether openly celebrated or indifferently integrated, technology disappears while it is in use; it becomes, as he describes in *Being and Time*, “ready-at-hand.” It is only when technology breaks, or impedes an activity that it becomes conspicuous, or “present-at-hand.” Because of this, it is not possible to truly grasp technology by examining it in the technical or anthropological contexts in which it is used.

Indeed, human beings design and manufacture technologies for humans in order to achieve human goals. No doubt there is much to be gleaned from studying technologies, their use, and how they facilitate particular tasks and provide the means to satisfy human designs. But in limiting our studies to these aspects alone, we come to

accept that technology is no more than an application of human knowledge, a feat of human ingenuity that extends our capacities and will onto the world. To hold fast to this assumption is not just shortsighted, Heidegger maintains, but deleterious. The problem, as he sees it, is that this way of understanding technology—as a neutral tool that carries out a human agenda—actively obscures the subtle and more substantial ways that it frames the world and its value to us, and how it situates us in relation to that world.

For technology is, in its original sense, not simply a set of tools that enable human activities; instead, it is a way of knowing through making. And making, Heidegger explains in his analysis of fourfold causality, is a complex and concatenated process that involves more than creating something from nothing (1977: 6). Technology, he reminds, originates in the Greek *technē*, meaning to make, or to craft. The Greeks aligned *technē* with *poiesis*: artfulness. In Heidegger's interpretation, then, the essence of technology is creative. And this creativity is aligned with *alētheia*, the disclosure or revelation of truth. What technology creates are the conditions of possibility for the authentic world to disclose itself.

Therefore, technology is ultimately an art, an art of contingency: it reveals “whatever does not bring itself forth and does not yet lie here before us, whatever can look and turn out now one way and now another” (1977: 13). Neither a material thing, nor a means to an end, technology sets in motion the process of world disclosure, where reality reveals its possibilities and its limits to us. This process becomes formative to our worldview.

While *technē* is a mode of world disclosure that is artful and illuminating, capacious and open, modern technology, he argues, is artless and concealing. It denies the incommensurability of the world, and reduces it by rendering it into calculable raw

material for human endeavours. The danger of modern technology is that it makes the world appear in advance. It sabotages technology's perennially essential role as the art of possibility, and turns it into a highly contrived way of disclosing the world, what Heidegger calls *enframing*. Rather than gesturing toward the world's infinite richness, modern technology organizes the world, and orders it according to what has value for humans and what does not.

Heidegger recognized this process of *enframing* as the supreme danger of modern technology, a danger that can only be addressed by holding onto technology's roots in *poiesis*. For it is in this poetic kernel that Heidegger finds technology's saving power: its purchase on contingency. Technology is a way of revealing the world that accommodates emergent possibilities. As such there is always an opportunity for the world to appear otherwise. This bond with contingency is essential to technology, and significantly, and essential to this study, it is borne of technology's non-humanness and its connection to the more-than-human world. As much as technology is a way of knowing cultivated through making, it is significantly not a human way of doing so. Heidegger is explicit about this: technology's process of revelation "is never a human handiwork" (1977: 18). Likewise, the essence of technology is not technical nor is it human (1977: 4).

To reiterate, instrumental and anthropological interpretations of technology would have us believe that causation—the way something is made, brought into and becomes with the world—is something that begins in the human imagination. But causation is a far more complex and dynamic process that involves a coalescence of forces and materials. Again, the limits, possibilities, consequences, significance, and

ultimately the essence of technology cannot be sufficiently explored by examining its use by and value for humans.

Rather, Heidegger contends, it must be probed in a domain akin to technology and yet fundamentally different from it. While he suggests that art is one such realm, I propose that animals comprise another even more alluring field of possibility in which to explore technology. Moving from art to animals may seem like a strange maneuver, but it is worth noting that our experiences with animals are similar to those we have with art, insofar as they are always initially aesthetic. Burt himself asserts: “The animal has the potential to do the work of art before it is ever an object for art; is always an inhabitant within the domain of aesthetics” (2008: 5).

Animal interventions are aesthetic ones, and aesthetic interventions are meaningful in that they can significantly reshape what Jacques Rancière has called “the distribution of the sensible” (2006). Aesthetic practices, Rancière holds, can destabilize the predictable coherent world that presents itself to our senses. They are “operations that produce a discrepancy, a dissemblance” between worldly things as they are and how we apprehend them (2009: 7). This encourages a reassessment of things, and a reorganization of the world in order to account for unacknowledged valences. This aesthetic confrontation at the surface of encounter—as well as animals—held little interest for Heidegger, something I will return to a little later, but it serves as this work’s primary concern.

Suffice to say, thinking about technology and its relationship with animals offers an invaluable occasion to truly consider technology beyond its anthropological and instrumental value, something Heidegger ultimately failed to do. He was concerned with recalibrating our understanding of technology by illuminating the essential but

forgotten linkage between *technē* and *poiesis*. But he neglected an even larger rift: that between *technē* and *physis*, between culture and nature. By drawing a distinction between the worlds that we make, and the world as it is, he left in place a dangerous anthropocentric scaffolding that ended up supporting a hierarchy of value. A structure that compromised his inability to resist the violent, devaluing logics of modern technology.

Though he was resolutely anti-humanist, rejecting the tenets of humanism and the belief in the superiority of human consciousness, he still insisted that human being, what he calls *Dasein*, is fundamentally different from, and more meaningful than, non-human animal being. Concomitant with this assumption, was his reaffirmation of the Aristotelian distinction between *technē* and *physis*. *Technē* and *poiesis* may be mutually implicated, but they are still fundamentally different from nature, and belong exclusively to the human estate. Artfulness is, then, something he recognizes in technology, but not in nature.

This is because, for Heidegger, art and artfulness are related to language which is uniquely human. Language is the primal artifice that estranges, differentiates, and elevates humans from nature. It follows that since animals do not have language, they are doomed to the domain of aesthetics, condemned to live on the meaningless surface of the world, while humans get to forge deeper and more meaningful relationships with it. This is what ultimately leads him to his now famous adage: “the stone is worldless, the animal is poor in the world, man is world forming” (1995: 176). Surfaces are meaningless, unless there is language to give them meaning. Animals are “poor in the world” because without language, they cannot think, question, or make meaning (1995:

176). The surface is void, in Heidegger's estimation—but only because he treats it as an inert thing that requires language to animate it.

By privileging language over aesthetics, he was not able to fully jettison humanist trappings. As such, his philosophy is weighed down by what Matthew Calarco calls “metaphysical anthropocentrism” (2008). Heidegger begins to open up thinking, but his insistence on the existence of an essential chain of being that places humans at the top, and animals at the bottom, shuts down other epistemological possibilities. It is for this reason that Heidegger is both a productive point of reference and a necessary point of departure for thinking about technology.

To work toward a non-anthropocentric perspective that is capacious enough to genuinely entertain animals and technology together, it is necessary to unmake language as the ground zero of difference. This means shifting our attention away from content, depth, and interpretation and returning our attention to aesthetics, to surfaces, forms, and more importantly, to the processes that actualize them. For Heidegger, it was not the aesthetic encounter itself that provides the space for revealing the essence of technology. Rather it is the kind of thinking and questioning an encounter generates that actually leads us toward the “truth” of technology. Heidegger is, thus, interested in what lies beyond the surface of an aesthetic experience. In fact, he ends his technology essay with a barb at “our sheer aesthetic-mindedness,” suggesting that taking up with aesthetics makes us immune to the nascent possibilities of “the coming to presence of art” (1977: 35). He ultimately proposes a disregard of aesthetics in favour of thinking and questioning—in short, by privileging language above all else.

Heidegger felt that an aesthetic approach contributes to a sense of naïve mastery over the world, where totalities seem to be fully available to the senses. An aesthetic

approach he contends, encourages the subject to fully objectify the world she encounters, and see it as a vision that materializes just for her. In “Age of the World Picture” for example, he associates the aesthetic approach with subjectivism and the dreaded logic of *enframing*: a reduction of the immeasurable entirety of the world into a picture, rendering it as a calculable surface. No doubt, these are dangerous tendencies; however, the aesthetic approach in and of itself is not the problem. Rather it is Heidegger’s underlying anthropocentrism, coupled with his refusal to address aesthetics that are the central issues here.

Against Heidegger, I take encounters between animals and media as indicative that technology also frames, qualifies, and makes possible animal becoming and world disclosure as well. Investigating how media intervene in and potentially transform how non-human animals experience and negotiate with their environments can be generative. However, it is only productive insofar as we acknowledge both the aesthetic coordinates and ontological weight of animal being. Certainly animal-media encounters can deepen our understanding of non-human animals and their relationship with their surroundings. But it is also an ideal occasion to defamiliarize technology, consider it anew, and extend our appreciation for the myriad of ways media technologies are involved in more-than human worlds, and the production of reality more generally.

Questioning technology begins at the level of aesthetics. Surfaces, pace Heidegger, are not mere facades that veil deeper meaning. They are not so much things as they are outcomes. They are not in themselves totalities, but they bear traces of more complex processes of production. They are partialities that contain multitudes. They are valuable insofar as we consider how they come to appear, with full acknowledgement of their ontological linkages with the world. As Ron Broglio explains in *Surface*

Encounters: Thinking with Animals and Art, surfaces might appear to offer limited access to animals, but we would do well to remember that animals are always already inaccessible to us. But just because their interiority is unavailable, that does not mean it is not there. Instead, the surface offers an opportune sensible and tangible zone that can allude to interiority, and provide space for speculation and negotiation (2011: xix).

Staying on the surface works to keep our discussions of animals and their interactions with media in tune with material reality while avoiding the tendency to slip into abstract conceptualizations and generalizations—into which animals and media both get trapped in. Animals and technological media are wily and mutable; though imbricated in an array of practices, relations, gestures, affects, forms and forces, they cannot be reduced to them. They are more than how they appear. Their appearances do not fully represent them, but they nonetheless bear meaningful traces of what they are and the processes by which they came to appear. Therefore, the surface, in all its partialities, is still able to allude to a relational richness, a situatedness of being in the world.

III. Turning Toward Non-Human Animals

The project's turn toward animals is, then, not entirely unexpected; non-human animals have long been provocative starting points for contemplation and speculation. They compel us to confront the inadequacies of language, explore the limits of our senses, perceptions, and understandings, and entertain alien ways of being in and getting on the world. The encounters we have with animals are not unlike those we have with art, or more importantly to this discussion, media technologies. That is, they both create and carry with them conditions of possibility for sensing, perceiving, and

imagining otherwise. As a result of this resonance, animals and media make for well-matched playmates.

Considering them together is also an effective way of sidestepping our tendency toward anthropocentrism. This presumption that the human is the most unique and important being in existence, that the world exists mainly to accommodate it, and that all knowledge is only valuable insofar as it concerns the human, has significantly limited our worldview. And yet, our methods for the production of knowledge are founded upon the unquestioned assumptions of human centrality and exceptionality.

As a result, even when we study non-human animals, we run the risk of using them to ask questions about ourselves. We might begin with animals, but we have trouble keeping up with them. Much like Narcissus, who was waylaid while chasing deer by the allure of his own reflection, our interest in animals is frequently subdued by a stronger curiosity about ourselves. In the end, animals are reduced to a heuristic for interrogating the nature of human being and becoming. We are *Homo sapiens* after all; our pursuit of self-knowledge is perpetuated in our very species name.

This project's orientation aligns itself with the non-human turn. "To turn toward the nonhuman is not only to confront the nonhuman," Richard Grusin writes, "but to lose the traditional way of the human, to move aside so that other nonhumans—animate and less animate—can make their way, turn toward movement themselves" (Grusin xx-xxi). In addition to studying the non-human, as Grusin suggests, this turn is also committed to tempering human centrality by moving conscientiously aside, creating a space through which the non-human can pass. However, this is not a turn away from the human nor is it meant to be a devaluation of the human.

Rather, the non-human turn is goaded by the proposition—to paraphrase Bruno Latour—that we are not, nor have we ever been, human. It is energized by Michel Foucault’s suggestion that the human is a recent invention, an idealized construction, perhaps nearing its end (2009 [1966]: 422). Before it separated itself off from and lorded itself over other beings, the human always coevolved, coexisted, or collaborated with the non-human (Grusin ix). Examining animals and media together, by forcing the human to the periphery, is a failsafe against our deeply rooted tendencies for anthropocentrism. It asks not what animals and their involvement with media can illuminate about us, but what they can clarify about media and communication. While these materials and processes are certainly part of the human estate, they are not exclusive to it; rather they are constitutive, to varying intensities, of the crucible that is reality.

IV. Non-Human Animals Turning Toward Media

This study is not just about turning toward non-human animals, it is equally about animals turning toward media, independent of human will, desire, or design. Putting them together is not a thought exercise, a human inclination; it is an extension of their actual, physical mutual implication. Even in those human-orchestrated meetings between animals and media, what transpires is to an important extent, beyond human expectation and control. Examining the peculiar dynamics that unfold when non-humans themselves turn away from the human and toward one another, promises to create new ground from which to cultivate fresh insights about media. It offers ways of re-examining media operations and their infrastructures, and the material, conceptual, and discursive elements that animate them and more importantly, their

involvement in the world making and binding processes of communication beyond the human.

I address these eventful animal turns toward media in the case studies that make up the bulk of the dissertation. These case studies are built around three vignettes scavenged from the Internet. Each scene zooms in on a strange, singular, and seemingly marginal event, only to zoom out to reveal a much more substantial and previously neglected material-semiotic and historical entanglement between animals and media. By moving between these present day encounters and their secret histories, it attempts to get at a richer more capacious understanding of media and communication. Ultimately, the seemingly cursory collusion of media and animals in the present moment is not a recent or isolated phenomenon. It is rather, a perennial one that is suggestive of a more significant mutual involvement at conceptual and pragmatic levels.

In the first scene, a giant pacific octopus seizes a digital camera, and accidentally makes a movie. This altercation provides an occasion to explore the popular phenomenon of animals stealing cameras in mid-record and to consider more closely the relationship between animals and cameras. It investigates the linkages between the aesthetics of animal imagery and the material realities of its production in order to segue into a larger meditation on cinematic representation more generally. This encounter provides an occasion to revisit and re-affirm cinema's ontological realism. At the same time, it also illuminates the importance of the non-human to secure this realism. Cinema is ultimately a process of communication between worlds, and the non-human is integral to the translation of details from one world to another, and enabling us to move with and through those worlds.

The second scene depicts a non-human ape playing with a touchscreen tablet in a zoo, and explores how the image was a catalyst for the development of “Apps for Apes” an actual enrichment initiative for orangutans in zoos. It considers this project’s discursive aspirations and the ways in which the orangutans impose material limitations on these desires. It also attempts to situate the project within the larger historical and discursive legacy of non-human ape communication projects. It examines the way non-human apes are casualties of a particularly modern notion of communication, which attempts to bypass shared exteriority in favour of accessing interiority, and the idealization of communication as a meeting of minds. Orangutans offer a counterpoint here: by inviting our attention away from their mysterious interiors, they recondition this impoverished and uncharitable conceptualization of communication and promote something far richer and more hospitable.

In the third and final scene, a digital data-carrying homing pigeon races against the Internet to meet a computer in the rural UK. This publicity stunt meant to emphasize poor broadband speeds, is an occasion to interrogate the persistent cultural predilection for mobilizing the carrier pigeon as a primitive medium. It revisits why the bird has been neglected, attempts to make space for and craft a provisional account of the carrier pigeon in the history of communication. This historical revision illuminates that despite its lowly status, the carrier pigeon has in fact been a persistent part of imagining and materializing modern communication. It also affirms that materiality and movement are always required for even our most important symbolic communications.

V. *Mise-en-scène: Actors, Props, and Framing*

The choice to focus on octopuses, orangutans, and pigeons is not so much strategic as it is organic, developing out of my own travels through the Internet and what I found there. Nonetheless, each of these case studies auspiciously focuses on a particular species that carries an enduring cultural reputation in relation to which this project seeks to both work with and against. I acknowledge that their characterizations are the result of human imaginings, but they are also sometimes the outcome of the animal's comportment and its own participation in its self-representation.

I acknowledge that the homogenizing term “animal” can never fully approximate the diverse multiplicity of singularities of the living beings to which it refers. Jacques Derrida (2008) offers an important corrective to this with the term, “animots”: a homonym for the French, *animaux* that simultaneously draws attention to its multiplicity and its status as a word (*mot*). “We have to envisage the existence of ‘living creatures,’” Derrida argues, “whose plurality cannot be assembled within the single figure of an animality that is simply opposed to humanity” (47). This is an impossible task, but nonetheless my analyses aspire to be generous toward the ontological authenticity of these animals by leveraging the realities and specificities of their species-being against their symbolic status.

Species is not an essential category by any means, and often obscures the individual particularities of animals and creates inaccurate generalizations. However, until we develop other ways to address animals, it is also a provisional and generative means to begin designating the multitudes of more-than-human ways of being in the world. The animals I focus on in each of the following case studies provide effective human foils, offering occasions to confront and challenge human tendencies to

anthropomorphize or alienate animals, and reveal and rectify the poverties of human thinking.

Octopuses, for example, are objects of both fear and fascination for humans. As cold-blooded, marine invertebrates with distributed intelligence they occupy a promising position of alien alterity. This outsider status allows them to exist in radical contrast to and distance from the human. They present a wholly different way of being in the world, and effectively elude anthropomorphic identification. Orangutans, meanwhile, are equally fascinating but for different reasons. They are exotic, charismatic mega fauna that, in addition to being endangered, also share an uncanny physiological similitude to humans. As such they are prone to too much attention, and not enough distance from humans. They are trapped and consistently undermined by our anthropomorphic tendencies to identify with them. Thus orangutans can benefit from being dislodged from this all-too familiar trap of association by similitude. Pigeons, by contrast, are a ubiquitous near-banality of the everyday urban landscape. They are practically rendered invisible by our indifference, while at other times they are framed as pests, and made unfavourably visible by our disgust. Singling out the carrier pigeon in particular, is a way to make the magnitude of the pigeon's underestimation all the more surprising and forceful.

This study does not examine these animals through direct observation. Rather the animals under analysis here constitute technologically mediated representations. In direct opposition to much of the writing on animals, this project does not dismiss animal representation in favour of direct, physical encounters with real animals. Even the appearance of live animals is always already mediated by human optics and human thinking. Rather than avoiding the question of mediation, or denigrating the very

process of mediation, this project seeks the recovery of the authenticity of the animals' presence in mediated representations. One way I try to do this is to acknowledge that animal representations, no matter how seemingly contrived, always presume—to varying degrees—real animals encountering techniques and technologies of mediation. As much as this study wishes to separate animals from media in order to see what the former brings to bear on the latter, the two form an impossible Gordian knot. Thus tracking their traces, and exploring the complex ways in which animals and media are imbricated, is productively done with a media archeological lens. Media archeology, as Wolfgang Ernst explains, is both a method and an aesthetics of analyzing media. It is carried out, in the spirit of Foucault, in a process “freed from the anthropological theme” (Ernst 239; Foucault [1966] 2009: 17). It resists producing and organizing knowledge through traditional conventions like teleology and human hierarchies of value. As such it is well suited for exploring the tangled material-discursive mesh of animal-media relations.

Media archeology is not to be confused with traditional archeology, which constitutes the unearthing of the old and the forgotten materiality of the past in order to create a coherent narrative of history. Instead, media archeology is a means to consider the material, historical, and theoretical implications of media by tending to those instances when “media themselves, not exclusively human anymore, become active ‘archeologists’ of knowledge” (Ernst 239). This project treats the Internet not only as an archeological field site of animal-media relations, but also as an unlikely archeologist of those relations.

Media archeology is less concerned with chronology and teleology; it is an approach more interested in the material-discursive configurations that underlie and

animate the topography of the present. Traces of animal-media encounters are not valuable insofar as they are indices of past encounters but rather because they prompt questions about how and why these traces exist in the first place. At issue is not the veracity or authenticity of these leavings, but the material-semiotic-discursive relationships between animals and media, nature and technology, reality and representation.

VI. What This Study is Not

This is a study of animal-media encounters, but as will become clear, animals and media actually matter to one another in a number of different ways. Assessing the relationships between animals and media can take any number of circuitous routes. As such, it is worth taking a moment to establish what this study is not. Though it delves into questions of animal representation, it is not a study of how media represent animals, and how those representations in turn, reveal and construct human attitudes about animals. While animals have a very rich symbolic history in human culture, this study is not interested in how animals are merely signs that point back to the human. It aims, instead, to restore realism to animal appearances, to return to them their own ontological plenitude. It aspires to consider these non-human beings as living sovereigns who make their own meaningful ways in the world and also participate in their own representation.

Though it is curious about animal-media interactions, this project is not about how media can be used to help us communicate with animals. On the contrary, it is highly critical and suspicious of such ventures since they are often self-interested and borne of impoverished conceptualizations of communication. Nor is this a roundabout

way of proving that animals are intelligent and emotionally complex beings with rich social lives—in short, just like humans—and therefore should be afforded rights. This project is nonetheless interested in questions of ethics and responsibilities but it is playing a much longer game.

While not explicitly addressed, what undergirds this study is the belief that if we are ever to make the world better for animals—and for people—it begins with turning over the ground onto which animals and humans are figured, and where their value is calculated and perceived. This ground is currently cultivated by what Giorgio Agamben calls “the anthropological machine,” a mechanism that keeps animals and humans at a safe distance from one another (2002:26). The very same mechanism that separates them however, is also capable of putting them in dangerous proximity, making it possible to both humanize animals and animalize humans. These processes are often devastating for all parties involved. Though the anthropological machine favours the human, because the human is only a concept, it is mutable, and prone to arbitrarily changing the terms of eligibility for inclusion and exclusion, with distressing consequences.

In this way, it aligns itself with the project of posthumanism. As Cary Wolfe (2010) argues, posthumanism is not a state of being or becoming beyond the human. Rather, posthumanism presumes that the human has always already been inseparably entangled with the non-human. This is why posthumanism should not be confused with the futuristic iteration of transhumanism, which celebrates the blurring of boundaries between human, animal, and technology. This is what Wolfe calls “bad posthumanism” because it is not so much about decentering the human as it is about enhancing the human. The human still occupies the principal node in the cybernetic triangle. That is,

animals and technology are incorporated into the human as though they are supplements, mere equipment to support and augment human being and becoming. This kind of posthumanism risks developing into another expansionist teleology of the human, but it also highlights the influence of humanism, and the way it continues to reproduce itself even in our most exploratory and speculative epistemological ventures.

Posthumanism is, then, less a state of being, and more so a process of working through and moving on from humanism. It names a critical awareness of how humanism has been, and continues to be the formative paradigm for the production of all knowledge. It is not enough to simply turn away from or decentre the human. Instead, it is necessary to acknowledge the ways in which our models and methods are shaped and informed by humanism, before we set out to create new models and methods. Rooted in the ground of humanism, our tree of knowledge will always produce the same fruit. It is tempting to come up with a new metaphor, but before replacing it with another—like a Deleuzian rhizome—it is important to till the ground first, examine the composition of the soil, and consider the conditions that make growth possible in the first place.

This project attempts to do just that, not just by questioning the centrality of the human but by playing with its attendant binaries, using the tensions that it sustains between animals and humans, and nature and culture to create traction and move beyond them. It inverts what Dominic Pettman terms, “the cybernetic triangle”—that unholy trinity of human, animal, and machine, by displacing the human at the apogee, and prioritizing instead the relationships, negotiations, and lateral movements that materialize between animals and technology (5). In this new arrangement, animals and media are no longer mere supports for human being and becoming, but autonomous,

worldly phenomena operating under the direction of unpredictable, non-human designs. When animals and media meet, they create strange contact zones, where the human is momentarily peripheral, and new opportunities emerge to learn about animals, about media, and the movements and materialities that enliven communication.

VII. Media Travels and Feral Ecologies

Media become strange in their encounters with animals. This interest in considering familiar, everyday phenomena in new ways is inspired by the work of the Estonian ethologist, Jakob von Uexküll (1864-1944). While Uexküll tended mostly to outwardly natural phenomena and environments, his approach is capacious enough to be generative in the ostensibly unnatural elsewhere of media studies. Uexküll argues that every organism is bound to its own customized dwelling world, which he calls *umwelt*. In his estimation, the *umwelt* is a subjective sphere of significance that is analogous to a soap bubble that fits around each organism.

This surrounding world complements the organism's particular physiological needs, perceptual abilities, and capacities for action. It is made manifest by the senses; bodies conjure their world into their own vistas of understanding. All subjects are inclined to see the world as only for them. It follows, then, that humans see the world anthropocentrically; squirrels, squirrel-centrally. If we were to imagine what it is like to look out onto the world from inside any given bubble, we would see our world, transformed. Many familiar phenomenal qualities would be amplified, while others would vanish entirely, and new ones would appear (Uexküll 43).

Therefore, as Uexküll sees it, there is not one unified objective world but many

subjective worlds existing in tandem. These micro-worlds co-exist. Their outer membranes press against each other but never burst. As Dominic Pettman describes it, they only offer a glint of “a limit that threatens to disappear but constantly reasserts itself” (97). He is skeptical of any ontological overlaps between *umwelten*, insisting that in Uexküll’s system “any communication between species occurs through elaborate, ultimately solipsistic mistranslations” (Pettman 211).

These worlds may indeed be largely incommunicative: Uexküll maintains that, “every animal, no matter how free in its movements, is bound to a certain dwelling-world” (139). But these worlds are not completely out of touch. He also dictates that it is the task of the ecologist to research the limits of that world, to see where one ends and another begins. And these limits become manifest when a phenomenon figures in multiple environments simultaneously, such as an oak tree, in Uexküll’s most extensive example (126-132). They create tangents where *umwelten* touch and threaten to overlap. Such contact zones may have been ancillary to Uexküll’s discussion, but this dissertation takes them as its primary concern.

When looking at the oak tree, a forester will see nothing more than a source of lumber. A whimsical little girl, by contrast, will imagine a strange face in the pattern of the tree’s bark, and see a terrifying demon. A fox and an owl will see the tree as a shelter. However, for the fox living underneath, the tree will be perceived mostly by the qualities of its roots. At the same time, the owl up above will focus on the sturdy high-reaching branch on which it perches. In addition, a squirrel will look at the tree and see a network of climbable branches. An ant and a bark beetle will primarily focus on the tree’s bark. However, the ant will tend mostly to the surface of the bark and the food that might be

there. The beetle, meanwhile, will be concerned only with the thickness of the bark as it eats its way through it.

In each one of these environments, Uexküll explains, the oak tree “plays an ever-changing role as object, sometimes with some parts, sometimes with others” (132). The meaning of the tree is not just relative to its context. Rather, the tree is all of these things: it is a quantity of lumber; it does bear the face of a demon; it has a tangle of roots; a network of branches; and a blanket of bark. Nothing about the tree itself changes from one *umwelt* to another. Certain salutary qualities simply get accentuated in one constellation, while others are omitted. No one quality has *a priori* significance over another. The lumber is no more essential to the tree than its bark.

Again, this is not evidence of a crude perspectivism; what Uexküll is trying to relate is less the sheer variety of meanings phenomena can have, and more that their meaning is implicated in “the tissue of relationships among environments” (143). At the same time, he also emphasizes that all perceiving subjects are equally valuable participants in the disclosure of an object’s meaning. The tree’s manifold meaning, produced in the revelation of its various qualities and uses, is beholden equally to the human forester as it is the bark beetle. One *umwelt* and its particular configuration have no privilege over another.

This dissertation is, then, a travelogue, in the spirit of Uexküll’s *A Foray into the Worlds of Animals and Humans*. Like his peripatetic adventures into strange worlds, the project is less about traveling to unfamiliar locales and more about seeing familiar places and their fixtures, anew. It is a journey that attempts to skirt beyond the boundary of where our mind meets the world. It is equally a journey that flits back and forth between representation and reality, aesthetics and ontology. In this way it is also

motivated by the centrifugal, world-rendering moves of cinematic realism, as identified by film critic André Bazin.

Cinematic realism is a method of understanding representation as much as it is a style of representation. It is a way of addressing the relationships between worlds, lived or imagined, and moving between them. Though Bazin never mentioned Uexküll, his ideas about realism can be expressed well in Uexküllian terms. For Bazin, realism is an ethical mode of representing and looking at the world. It tends to the complex processes by which the real is transformed into representation. It is less concerned with representational verisimilitude, and more interested in the way representation is faithful to the ontological richness of the world it transforms, a relationship that is essential if we are to ever take representations seriously, and be moved by them. Realism allows us to move between representation and the real, in intellectually, emotionally, and ethically productive ways.

Bazin was interested in the conditions of this movement between the world as we already see it, the world the camera shows us, and the world as we cannot ever really see it. Cinema offered a confluence of all of these various perspectives, which can be described in *uexküllian* terms the relationships between the human *umwelt*, the camera's *umwelt*, and often the *umwelten* of animals, respectively. Bazin, much like Uexküll, maintains that the struggle to represent different worlds, and the work of exploring and speculating about them is essential to our acknowledgement and appreciation of reality's incommensurable richness. This dissertation puts this ethos of outward wandering additionally to task as it dips into the ocean and into the strange world of a Giant Pacific octopus, over the land and into the sequestered environments of captive Sumatran orangutans, and up to the sky to the quasi-captive domain of carrier

pigeons. It starts from a place of wilderness, continues into the terrain of captivity, and end up in a hybrid place somewhere in between.

It is also about media travels: their transition into the realm of the so-called natural ecologies of animals. What these migrations divulge is that the relationships between nature and culture are much more promiscuous than we like to admit. Media ecologies are not simply analogous to or distinctive from natural ecologies, but inseparable from them. This association suggests that ecologies are much more appropriately thought as feral, and not exclusively natural or cultural. Feral ecologies are hybrids that trouble the distinction between the natural ecologies of animals and artificial ecologies of media. They are the muddle produced by our continued insistence on the separation of the domains of nature and culture, the very mess Latour insists we make in our efforts to purify and create order (1993).

Feral, from the Latin *fera*, means wild. However, it specifically designates a state of wildness after an escape from captivity or domestication. It is more commonly a passage from culture and civilization back to nature. Feral blurs and threatens to destroy boundaries; therefore, this prodigal return to nature is not without contention. The feral signals a primordial reversion, a slippage into a primitive state, and a menace to the concept of human civilization. Feral animals, for example, those domesticated species that have relapsed to the wild, are treated as pests. They trouble natural ecosystems, and threaten indigenous species. Feral homes, those human houses that have been abandoned and demolished by neglect, are treated as un-homely.¹ They are derelict buildings that nature has reclaimed. Feral children, those raised without human

¹ See for example James Griffioen's haunting photographic project, "Feral Houses" (2012).

contact, language, and culture are even more unsettling. They are considered nature's captives, forever exiled from human society and culture, banished to an island of incommunicability.

It is worth noting that feral is also related to the Latin *feralis*, which means belonging to the dead. When what once belonged to the human becomes feral, it signals a symbolic death. It marks a forfeiture of human holdings, an undoing of all the energies it has used to separate itself from Nature, and generate mastery over it. But this symbolic death is also an instance for transformation and creation. When media become feral, their estrangement presents an opportunity to see them and relate to them, in new ways.

The feral remains unsettling as long as the boundary between nature and culture remains intact. Acknowledging the existence of the feral makes it untenable to maintain this separation. It encourages us to open up, and make space for new possibilities of seeing and knowing the world. Perhaps to see that everything that exists is nature, and that nature, as Frederick Turner proclaims, "is the process of everything interfering with—touching—everything else" (330). Examining those sites where touch takes place—these are feral matters. They prompt us to abandon questions of who and what belong where, and inquire instead about the world that is, the world we become awakened to in our acknowledgement that is richer than the one we made with our minds and our hands.

The project also travels across disciplines and subject areas, from still and moving images and cinema, to touchscreens and game design, primatology and cybernetics, to military history, to infrastructures of transportation and communication. In the end, these disparate areas work together to produce variations on the theme of

communication as a sprawling process that is infinitely more than the elite transaction of symbolic exchange between two human minds. Each case study offers ways of thinking about communication as an abundant assemblage involving environmental exploration, interaction, and negotiation, as well as physical attunement and accommodation. It may be at times an immaterial, intangible process, but it is also in the end anchored to materiality and conditional upon movement.

VIII. Media, Where *Umwelten* Converge

Of course, it makes sense to wonder what an oak tree might be for a fox or an owl. Both belong comfortably in the domain of nature. To consider what the Internet might be for a squirrel is a much stranger line of questioning since it must extend across the chasm that separates culture from nature. Though it might appear unseemly, it is by no means unreasonable. Uexküll maintains, after all, that any phenomenon can exist for an animal, as long as there is evidence that it perceives it. An object exists for an animal if it appears in its perceptual threshold. And it only appears in its perceptual threshold if it is meaningful and relevant to the animal; irrelevant objects are ignored. Therefore, so long as an object seems to exist for an animal, it follows that there must be a meaningful relationship there.

Thus, a thing only manifests to an animal if it carries meaning for it, that is, if it complements the animal's sensory comportment in some way. Animals, Uexküll concludes, are never objective observers; they do not enter into a relationship with a neutral or abstract object (140). At the moment of encounter, the object ceases to be an object in general and becomes an object in particular, situated in a series of significant relations. The very existence of animal-media encounters provides evidence that

animals can perceive ostensibly human-world objects, forge relationships with them, make meaning from them, and actively integrate them into their environments.

An Uexküllian approach is particularly generative for considering technological media anew, because unlike oak trees, they are far too comfortably considered phenomena exclusively bound to the human *umwelt*. This is problematic because though technology is, as Heidegger reminds, constitutive of the human *umwelt*, it is not human. Rather, it is a non-human agent that intervenes in and modulates the gap between us and the world. Furthermore, it is not just an object, but a process, an often powerfully creative and reflexive process that binds us in formative relationships to the world. Media technologies are not only multi-*umwelten* objects, they are portals that provision fugitive moments where we can steal glimpses of otherwise inaccessible, non-human worlds.

When animals meet media, media become sites where *umwelten* almost overlap. However, the very nature of the *umwelt*, is that it is a subjective world. We cannot venture outside our *umwelt* on our own. Uexküll's method for exploring other *umwelten* involved observation of the organism's behavior, and modest speculation informed by the organism's unique physiology, sensory capacities, and its biological needs. More importantly, it also involved visual analysis, and the mobilization of non-human technics of visualization. Technics of visualization were integral to the intelligibility and the very conceivability of Uexküll's theory of *umwelt*.

The theory itself was developed in tandem with emerging apparatuses, such as telescopes, microscopes, and cameras. As Inga Pollman argues, specifically because these devices provided images of worlds not produced solely by the human sensorium they made it plausible for Uexküll to imagine the possibility of the existence of non-

human worlds. Cinema especially, she ascertains, established a non-human *umwelt* in the human *umwelt*, providing a productive opening (2013: 780). These novel technics of visualization offered a kind of realism of perspective that could, at the level of aesthetics, disclose something of what it is like to be a non-human being in its world. Media, then, allow for a kind of transfer or translation of worldly detail from one *umwelt* to another. Even the text of *A Foray into the Worlds of Animals and Humans* is a distinctly visual one replete with imaginative illustrations by Georg Kriszat. These images are further evidence that Uexküll's theorization of *umwelt* is itself a technique of visual speculation and approximation. It is a technique that gestures toward worlds that elude representation, but must be gestured toward and imagined all the same.

The contact zones where the *umwelten* of humans, animals, and technologies overlap are sites of productive diffraction. This dissertation focuses on particular animal-media encounters and uses them to confront unexpected connections between animals and media, tease out their neglected material-semiotic relationships, and expand upon them in the hopes of enriching our understandings of media and communication.

IX. The Limits of the Human *Umwelt*

Thinking media and communication as inclusive and constitutive of both human and non-human worlds, trespassing the domains of culture and nature creates a much richer and more comprehensive vista for analysis. And yet the continued insistence on these ontological distinctions makes it difficult for this horizon to even appear. Animals and technological media have a long history of shared appearances. Yet actual contact between them remains mostly unacknowledged. It remains obscured by an inattentional

blindness that sets in when we reach the edges of our *umwelt*. That we fail to see these encounters is suggestive of how our thinking often forestalls and determines reality's appearance. That we are inclined to see the world subjectively is not a uniquely human hindrance; however, that we actively insist it is the best and only way to see the world, is—especially when we have the capacity to sense and imagine otherwise.

No doubt, that pesky squirrel was loitering around Blum's Internet long before he took notice. Other squirrels were too, in other backyards, in other cities. And not only squirrels: sharks have been known to nibble on undersea telecommunications infrastructure, a problem Google has recently rectified with the addition of a new Kevlar coating to its trans-Pacific underwater cables (Lewis 1987; Oremus 2014). Other marine dwellers also congregate around these cables, especially where they traverse soft sediment. They provide a hard substrate onto which sea anemones and other sedentary creatures can attach. Other fish are in turn attracted to these sites, not only because of the presence of other life, but also because of the localized turbulence produced by currents as they flow over the cables (Carter 31). To say nothing of the eagles and their excrement that caused flashovers, and managed to bring down the southern California power grid in the 1920s (Benson 2015). The phenomenon of animals traipsing around telecommunications is so common it is unremarkable. Songbirds perched on overhead wires has become a banal visual cliché that recedes into the background of quotidian life—until it erupts out of dormancy for particular reasons.

Encounters between animals and media consistently happen, sometimes outside our perceptual threshold, but also often within it, unfolding openly in the visual field. They remain unacknowledged, either ignored outright, or automatically dismissed as meaningless and extraneous. At other times, however, these encounters are actively

disavowed, vigilantly policed, or anxiously thwarted. The coming together of animals and media creates a cathexis: a forbidden or contentious contact zone between nature (*physis*) and technology (*technē*). For example, the two-shot of whale and reactor that so unsettles Langdon Winner is an unwelcome reminder of modern technology's irrepressible incursion into nature. Technology "always goes where it has never been," he writes (174). It "proceeds steadily from what it has already transformed and used up toward that which is still *untouched*" (174, emphasis mine). Technology's intrusion cannot help but spoil nature, suggesting that the two are oppositional and ultimately irreconcilable.

This project encourages a protracted confrontation of these promiscuous interactions to tell a different story: one that is far more interesting than the one where technology encroaches on nature and nature simply concedes. As the creaturely contretemps between squirrel and Internet suggests, the relationship is far more complicated. Nature too, is prone to go where it has never been, thus bringing into relief the variability and dubious nature of the ontological divide that separates them.

When animals and media come together, animals appear to negotiate with media as though they were any other element in their environment. This testifies to the mutual entanglement of media technologies and animal worlds. Rather than symbolizing some ancient, mythic drama, animals and media together physically enact and make visible the hybridity of reality, and emphasize that this reality is a work of cross-species sociality. Nature and culture can be antagonists; but a closer consideration of and genuine attunement to the particulars of their mutual involvement demonstrates that this perceived incompatibility is not essential. It is in fact more conceptual than actual. For the modern cosmopolitan squirrel there is no outward ontological value distinction

between an oak tree and its branches, and a utility pole and its wires. For modern humans, however, there is.

Media have their specificity and their contextual singularities. At the same time, they are just one aspect of a shared creaturely artfulness that includes the corporeal knowledges and techniques that species engage in to make their worlds more accommodating and hospitable. Animal encounters with media reflexively engage with and produce the more-than-human conditions of life and restore the essential social dimension to media technologies. The relation between bodies and their environments can be broadly understood as a technological one. For to dwell in the world is to actively make oneself at home in it using whatever means are available and possible. In short, *Physis is techne*.

X. Forthcoming Chapters

Setting out to clarify media and consider communication in new and unanticipated ways with animals, requires a genuine acknowledgement of the presence of animals in the visual field. In Chapter 1, I illustrate how animals are persistently effaced by an anthropocentric perspective. When the human occupies the point of reference for all being, animals are reduced to mute objects who remain meaningless until human subjects ascribe meaning to them. By privileging language, denigrating aesthetics, and valuing idealism over realism, this perspective also inhibits the conditions of possibility for animals to appear otherwise. Circumscribed to the separate ontological domain of nature, even if animals appear in culture, their presence is considered unseemly or disavowed outright.

The chapter identifies Jakob von Uexküll's ethology, and André Bazin's cinematic realism as two interrelated non-anthropocentric ways of looking that promise to unmoor the animal from the human mind, and situate them in the field of sensibility. More than just the animals themselves, this aesthetic approach acknowledges animals in meaningful relation to the textured worlds in which they appear. By foregrounding animal appearances less as outcomes of human designs and more so of non-human worldly operations, this approach is capacious enough to accommodate the dynamism of animal-media encounters.

In Chapter 2, I use an impromptu encounter between a giant pacific octopus and an underwater digital camera, and its inadvertent cinematic inscription to examine in greater detail the phenomenon of "accidental animal videos." That is, videos uploaded by humans but made unintentionally as a result of animals stealing cameras in mid-record. Not entirely unprovoked, these videos suggest something about the increasing ubiquity of cameras in the worlds of non-human animals at the present moment.

As amateur wildlife filmmaking gone wrong, these creaturely compositions bring much needed attention to the often concealed antagonism that exists between the aesthetics of animal imagery and the material realities of its production. As such they are valuable rejoinders to the anti-realist tradition of wildlife imagery, a tradition that seeks to fix animals to the domain of untouched nature divorced from culture. Addressing the materiality of these videos, then, means acknowledging the irrevocable entanglement not only of animals and cameras, and nature and culture, but of reality and representation more generally.

These skirmishes between animals and cameras also function more broadly as occasions where a fugitive reality meets the camera's mechanical insistence on capturing

it. In this way they are documents of the process of cinematic representation itself. As instances where nature quite literally “imitates the artist” they are the medium’s ontological realism made manifest, as defined by André Bazin (2005a: 15). For Bazin, realism is not simply a style, but a way to put film aesthetics to work in the service of the reality in which they are made, and at the same time, in the service of the medium that makes them possible. These little representational failures are able to achieve cinematic realism, I argue, specifically because they accede to non-human beings and forces, letting them become the catalysts for representation. In this way, they merely amplify the fundamental non-subjective dimension of cinema that has been there all along. When the camera is not mobilized as an extension of the human, it can provision generative openings in our insular subjective worlds.

Media slipping out of human hands, however, is not always a guarantee for productive estrangement. In Chapter 3, I investigate the trend of strategically placing media into the hands of non-human apes. This second case study opens on a scene where a gorilla plays a videogame on a touchscreen tablet in zoo. The scenario, as it turns out, was an April Fool’s Day hoax. However, it effectively tapped into a potent and deeply seated fantastical drama. That is, one where non-human apes play pre-subjective, pre-cultural humans who bear within them secrets about human origins that simply require the right technologies and techniques to make them accessible. So powerful is this fantasy, it provoked a very real enrichment initiative for captive apes called “Apps for Apes.”

“Apps for Apes” seeks to pair orangutans in particular with donated iPads in zoos for enrichment purposes, for public education about orangutan endangerment, and to marshal economic support for conservation efforts. Though carried out with the best

intentions, the project and the many actors who give meaning to it are not immune from epistemological temptations. The promises of transcending the limits of communicability across species difference, species extinction, and the enclosure of the zoo are too powerful to resist. Further, with its haptic screen interface and network capabilities, the iPad promises to offer a solution, or at least a diversion, to the problem of contact.

But coordinating encounters between non-human apes and communication technology is inevitably a risky venture, especially given the historically and discursively entrenched legacy of putting the two together. The chapter delves into this history, with special attention the way post-war Western primatology, in tandem with cybernetics, has framed non-human apes as our potential interlocutors. Thanks to this legacy non-human apes are persistently treated as mysterious but kindred subjects that need only to be activated and made accessible and communicative.

In this way, I argue, our encounters with non-human apes are always framed as communicative ones. However, these encounters are impoverished by their commitment to what John Durham Peters (1999) has outlined as “the dream of perfect communication.” This dream holds communication to the impossible ideal of minds, meeting. To achieve such a feat presumes that interiority can be made accessible, and that all variegated interiorities can be made equivalent to one another, so that information and ideas may be freely exchanged. This ideal of communication instrumentalizes our engagements with and relationships to others, and sees difference as a hurdle that must be dismantled. There is, however, no such thing as free and unencumbered communication; it is always shaped by those who set the terms of its unfolding.

I am critical of the “Apps for Apes” project; however, there are flickers of potential for more creative and tactful encounters with non-human apes. While the orangutans have been cast in this drama, they nevertheless improvise their own effects by resisting human attempts to direct them in particular ways. In addition, the project has also generated moves toward applications designed for orangutans. This may not repair the more troubling issues of captivity, exhibition, and conservation, but considering apes as users makes their stimulation, pleasure, and enjoyment matter. In this valuation is a nascent gesture away from questions about human access and the expansion of human consciousness, and more about hospitality, accommodation, and making provisionally livable worlds together. These small offerings are welcome: for endangered orangutans, livable worlds are vanishing at alarming rates.

In Chapter 4, I continue on this theme of accommodation, by considering the physical supports of communication. It opens with a race between carrier pigeons and the Internet. The birds take digital data to meet a computer as a publicity stunt, one that uses the carrier pigeon’s lowly status as a primitive medium to demonstrate poor broadband speeds. Though summoned here as a spectacular anachronism, I contend that there is nothing anomalous about the carrier pigeon’s reappearance in modernity. I wager that the carrier pigeon has long been a perennial participant in the material and imaginative possibilities of communication.

The chapter touches on pre-modern carrier pigeons, but devotes most of its attention to their work in the 19th century onward where they are most legible as a node in the expanding network of transportation and communication. In examining the intimate entanglements of carrier pigeons and technology during key points in modernity, it becomes clear that new technologies and techniques have and continue to

modulate and accentuate the carrier pigeon's operations. At the same time, the pigeon supplements and improves upon the functionalities of the existing technological infrastructure. Not just as an alternative during times of technological failure, carrier pigeons are a default stopgap when our technological aspirations exceed their material realities.

And yet, the carrier pigeon has been omitted from the history of communication, and has been denied occasion to bring anything to bear on how we theorize communication. I posit that it has been ignored not just because it is animal, but because it is more comfortably considered a form of movement. Deemed a throwback to a time before communication was supposedly separated from transportation, it has been underestimated as an auspicious effect of the bird's mysterious homing instinct. I illuminate instead that to communicate by carrier pigeon involves the considerable organization and complex coordination of a sprawling processual assemblage of animals, humans, technologies, materials, and techniques.

Therefore, pitting the old-fashioned pigeon against the new-fangled Internet misses the point: they are not rivals but allies, progeny of a longstanding relationship between communication and transportation, and animals and infrastructure. The carrier pigeon ultimately illuminates something fundamental about communication: that it is first and foremost a material process, and movement and coordination are always required to make these material connections.

The dissertation concludes by reiterating that while animal-media encounters are common in the current visual culture, they are but continuations of a much more longstanding relationship. Animals are, in the end, significantly implicated in the material and imaginative possibilities of media and communication. Recognizing this is

a way to make media material, and in that materiality media become an unlikely but common ground where strangers meet and make worlds, together

Chapter 1

Sights Unseen: Solving the Strange Case of the Disappearing Animal

Animals are fast disappearing...

—Paul Eipper, from *Animals Looking at You* (2).

Everywhere animals disappear.

—John Berger, from “Why Look at Animals?” in *About Looking* (24).

... everywhere one looks one is surrounded by the absence of animals.

—Akira Lippit, from *Electric Animal* (1).

I. Animal Traces in the Public Domain

During a trip to Sulawesi, Indonesia in 2011, British photographer David Slater set up his camera in a wildlife reserve to take photos of Celebes crested macaque monkeys. One bold macaque in particular commandeered the camera and turned it around on itself, repeatedly hitting the shutter-release button. By the time Slater regained control of the device, the monkey had produced a whole series of self-portraits, some of which are now widely available online (See Fig. 1.1). When the images showed up on Wikipedia in 2014 as part of the Wikimedia Commons, Slater requested they be removed, arguing that they were his copyrighted images. Wikipedia refused, however, insisting that because the images were produced by a non-human animal, and non-human animals cannot own intellectual property, the images ultimately belong to the public domain. Courts in both the US and the UK eventually agreed with Wikipedia: the photos did not belong to Slater, or the monkey (Gibbs 2014).²

² In 2015, PETA (People for the Ethical Treatment of Animals) filed a lawsuit on behalf of the monkey, now identified as Naruto, for copyright to the images. They sought a court order to administer the proceeds of the images to Naruto’s wildlife reserve, a lawsuit that was later dismissed (“PETA Sues to Give Copyright” 2015; “Monkey Selfie Case” 2016).

Certainly, this case raises some very compelling questions regarding non-human authorship. But by drawing attention to the ambiguities around the responsibility for the production of images, it also inadvertently acknowledges that it is, to certain extent, always a distributed process. The monkey “selfies” cannot be legally copyrighted to the monkey; nonetheless they testify to the animal’s involvement in the processes of its own representation. Whether intentional or not does not matter: the extent of its involvement and how to characterize that involvement are beside the point. What matters is simply that the animal was part of the process at all. While the monkey’s “selfies” provide an exceptional example of works made by a non-human, they also effectively foreground what normally remains in the background of animal imagery: the participation of animals. In this way, they are an exaggerated dramatization of the fact that animals are implicated in the processes by which they come to appear. They may not be involved as directly as this, but it is still a matter of degree, not of yes or no.



Fig. 1.1 “Monkey Selfies”: Self-portraits of a female Celebes crested black macaque monkey who picked up photographer David Slater's camera and photographed itself on the Indonesian island of Sulawesi. Photo by: Naruto (pictured)/David Slater (2011). Source: Wikipedia.

The following discussion would like to keep this series of monkey selfies as a dramatic counterexample to the traditional ways animal imagery is understood and characterized by the scholars writing about them. Images of animals might abound in modern visual culture, but in the literature about them, these rendered animals are not considered real. As this survey will clarify, there is a pervasive disavowal of animal presence in the visual field. Animals that appear in culture are treated either as signs and symbols of human meanings, or they are reduced to vacuous specters that are stripped of any meaning at all.

Despite the proliferation of animals and animal imagery in the modern visual field, John Berger wistfully but insistently laments in his influential essay, “Why Look at Animals?” that “everywhere animals disappear” (24). Berger not only dismisses images of animals, he also repudiates animals living in cities or on farms, in sanctuaries or zoos, or in human houses. These are merely animals in name, not in substance. The question posed in the title of Berger’s essay is rhetorical: why bother to even look at animals all, he wonders, when the ones we see are no longer really there?

This dirge continues to echo throughout discussions of animals in the visual field and has become a self-fulfilling prophecy. Animals in modernity are both everywhere and nowhere. We can see them wherever we look: in our homes, on the street, in zoos, in art galleries, or on screens, but what we see are merely animal-like forms, inauthentic, artificial, void, and meaningless.

Either these representational animals are presumed to have no ontological relationship to real animals, or alternatively, they are criticized for undermining real animals and any possibility for us to have genuine relationships with them. As a case in point, Randy Malamud’s term for animals in visual culture is “simulacrum-animals.”

These are the animals “on parade” and “in disguise” that “proliferate *ad infinitum, ad absurdum*” in the visual field. These pseudo-animals, he argues, “usurp much of the space we might have allocated in our minds to the consciousness of real, living animals” (2012: 74). Likewise, Berger argues that these cultural animals are additionally problematic because they cannot look back at us from their natural, creaturely distance, and as such we are no longer able to see ourselves reflected in and affirmed by their gaze.

While it is often motivated by care and concern for animals, this perspective ends up being inhospitable toward them instead. In his pity for the plight of modern animals, wrenched from the cradle of nature, Berger ends up overemphasizing the victimization and marginalization of animals by humans. This only undermines the vitality and ontological plenitude of animals even further at the same time reaffirming, albeit negatively, the power of the human over animals, its centrality and cosmic exceptionality.

By favouring a particular concept of animals as proxies of nature that must be protected from the corrupting influence of culture, this perspective ends up reinforcing the nature-culture divide. This is the same divide that exiles animals from culture and prevents them from not only being held in common regard, but also from bringing anything to bear on the production of knowledge. In addition, by setting up ontological oppositions between real animals and their representations, it betrays a stubborn and unproductive cynicism. This cynicism is fueled by a distrust of images, surfaces, and aesthetics more generally. It is linked instead to a commitment to language and depth, and idealism over realism, which only serve to elevate the human and marginalize animals even further.

These issues are a consequence of anthropocentrism which ultimately guides our approaches to and methods for studying animals. Thus, this chapter argues that if we are to truly entertain what non-human epistemology has to offer the study of media, communication, and culture, we must entertain non-human animal ontologies as well, wherever and however they manifest to us. Animal images are more than human artifacts; they are places where we can acknowledge animals, and let them be and become consequential beyond human terms.

II. On the Need for Ontological Heft in Representation

A wheel turns because of its encounter with the surface of the road; spinning in the air it goes nowhere. Rubbing two sticks together produces heat and light; one stick alone is just a stick. As a metaphorical image, friction reminds us that heterogeneous and unequal encounters can lead to new arrangements of culture and power.

—Anna Tsing, from *Friction: An Ethnography of Global Connection* (5).

Surface encounters between animals and media can generate friction. There is traction when exteriors touch and grapple with the forces, shapes, textures, and substances of their mutual materiality. Whether side-by-side or top-down, they can produce conditions for movement and transformation. That being said, in order make such travel possible, animals must carry some ontological sway. Unfortunately, animals in modernity are allotted only a spectral presence, and as such do not have sufficient weight needed to create traction. This dissertation relies on the provocative power of its juxtapositions, and thus the operational autonomy and ontological integrity of animals must be secured before continuing any further.

If we are to make new knowledge about media and communication with animals, it is absolutely necessary to first restore the disappearing animal to a state of visibility.

Not only that, we must also find a way to grant animal imagery the proper autonomy, dynamism, dimensionality, and ontological heft needed for it to create a more forceful impact. This means not only identifying animal traces, but also making way for the fullness of animal being in those traces. As Etienne Benson notes, studying animals requires a reliance on non-traditional methods and documents. He writes, it “depends on tracks, trails, or traces—those material-semiotic remnants of whatever the pursuer hopes to catch, those often unintentional indexes of a now-absent presence” (3). The traces animals leave behind, directly or indirectly, are often all that we have to go on. They may appear marginal and meaningless, but they must be treated as central and significant.

To study animals is to study inaccessible and furtive subjects and what they leave behind. We may want more from them than what they are able to give, but we must make do with what remains. It is possible, Benson argues, in the absence of actual, living co-present animals, to cultivate real, authentic, meaningful relationships with their remnants. This cultivation begins by emphasizing the animals’ involvement in the making of these leavings. It requires returning our attention to the aesthetics of animal imagery and the processes by which that imagery materialized. To proceed also involves taking a non-anthropocentric perspective that allows images to be something more than complementary fittings to human vision.

While the discussion that follows is about the ontological status of animal images, it is also necessarily about ways of looking at animals and animal images. The animal question has been and continues to be a visual one: looking is the very mechanism by which human beings produce and affirm species difference. Looking at animals is an incredibly vexed enterprise that has not served animals well. The human gaze, as

Giorgio Agamben argues, is fixed by what he calls, “the anthropological machine.” As such, human looking is always already prefigured by an anthropocentric frame that reduces the animal to an object, figuratively or literally, for the human subject. In light of these human limitations, what is required is not, as some have suggested, to denigrate animal imagery, nor is the solution a matter of looking away. Rather, what is necessary is a new means of engagement: a supplement to our human technics of vision. This technics of vision is a non-anthropological machine, a technique of looking informed partly by Jakob von Uexküll’s ethology, and André Bazin’s cinematic realism.

Though working in different fields (ecology and film, respectively) at different periods in Europe, both Uexküll and Bazin studied strange worlds, using aesthetic acknowledgements to segue into grander ontological explorations. In so doing, they both developed methods that provisionally delivered to the observer glimmers of otherwise inaccessible worlds. These richly textured worlds in turn emerged in productive juxtaposition with our own familiar world. They transformed our perceptions, broadened horizons of meaning, and solicited new ways of connecting, responding, and being.

III. Jettisoning the Desire for Interiority and Settling for the Surface

Aesthetic acknowledgement is at the crux of this discussion; a way to deal with animals by getting back to the surface, and away from concerns about depth and interiority (or lack thereof). Animals do not use human language. This perceived lack has long presented itself as a foreclosure to meaningful understandings of animals. Without language, animals are “silent.” They cannot communicate their interiority, and are thus unable to transform, bring meaning or value to their lives and their

environments. For Heidegger, this speechlessness dooms animals to perpetual meaninglessness. However, it is unfair to judge animals against a uniquely human quality, and perceive this difference as a paucity. Speechlessness need not be taken as a lack, nor must it be confused with absence of meaning. Taking language, a priori, as a benchmark of sophistication and value is ultimately self-serving. It guarantees the perpetual exclusion of animals from the domain of significance. To punish animals for not speaking with us is to punish them for not complying with the terms of communication we have outlined, to penalize them for not making their interiority available to us, and for not being more like us.

The desire to access animal interiority is a longstanding one, though it was most famously addressed by Thomas Nagel (1974) in his essay, “What is It Like to Be a Bat?” While Nagel insisted that there is a particular “something” of which it is like to be a bat, we cannot ever know it. Because we are not bats living with bat bodies, we do not experience the world the way they do. That is, primarily through echolocation; the most we can think is what is it like for *us* to be a bat. Animal interiority may present an alluring mystery, but it is one that we will never solve.

The preoccupation with interiority is, however, a more systemic problem. As John Durham Peters proposes in *Speaking into the Air: A History of the Idea of Communication* (1999) our fixation on interiority is the ultimate pathology of modern communication. Communication in modernity is mobilized as a problem of access between the self and the other. Dramas of communication are innervated by nightmares of solipsism and failures to communicate, or by fantasies of telepathy and the unlimited possibilities of communication. In Peters’ estimation, we must surrender this desire for mental communion, acknowledge the hard work of relating to others, and settle for what

is available to us on the surface. Consciousness, human or otherwise, is always out of reach. Our energies should be directed toward more productive forms of engagement. We must acknowledge what inaccessible others do make available through display: their exteriority.

Settling on the surface requires restraint, a resistance to the desire to plumb animals for some semblance of subjectivity and consciousness. Probing animal exteriority entails recognizing difference but also the playful negotiations that happen at the very surface of encounter. Such details can help us call attention to the significant ways animals participate in the textures and dynamics of the visual field. Focusing on the surface of animals does not mean that animals do not have interior depths, just that those depths are inaccessible to our apprehension.

What are available to us are animal appearances, comportments, operations, and interactions. Thus we cannot grasp animals as they truly are, we can only access animals at the level of aesthetic encounter. But directing our gaze toward animals is not necessarily a guarantee for seeing them—not because the surface deceives us, or veils the more complex reality of animal life. Rather, because we tend to let our ideas about animals and our motivations for looking at them determine what materializes before us, eclipsing real animals from view. Claude Lévi-Strauss deemed animals as “good to think” (1963: 89)—and the growing literature on animals in the humanities especially illustrates that this is the case.³

³ The books published since 2007 under the auspices of the University of Minnesota Press’ “Posthumanities Series” are a particular case in point, and for this reason figure largely in this literature review. Edited by Cary Wolfe, prominent scholar of posthumanism, the series has produced over 30 works that engage with animals, media and culture to varying degrees.

Animals may be rich “tools” to think with, but as Kari Weil advises, it is even better to “unthink” animals (2012: xvi-xvii). To make the most of what animals have to offer requires more generosity on our part: surrendering our preconceived notions about them, tempering our human claims of precedence and exceptionalism, and granting them an existence that is not limited to our ability to imagine it. In short, it means making a clearing for actual animal presence in the visual field, to provide the necessary space for animal meaning that is not reducible to human rationalization.

If there are any philosophical stakes in the study of animals, as Matthew Calarco reiterates in his introduction to *Zoographies: The Question of the Animal from Heidegger to Derrida*, they lie “in the clearing of the space for the *event* of what we call animals” (4, emphasis in the original). In order to genuinely consider animals, he suggests, it is necessary to appreciate them less as thing that *are*, and more as things that *happen*. Animals are situated and entangled in space-time, enacting emplaced trajectories, capable of unexpected action that can extend outside human understandings of causality.

Acknowledging animals in this way creates the conditions for ambiguous, itinerant connections, and generative transformations. More than reinterpreting the animal figure, then, what is required is a structural renovation of the very ground on which the animal is perceived. John Mullarkey likewise contends that the very idea of philosophy itself “must also be reshaped in order to say anything significant about the animal” (12). Any intellectual inquiry into the animal must actively work against anthropocentrism. Only a decentering of the human will provision space for the event of the animal. Looking at animals, then, requires a reorganization of priorities, and a fundamental recalibration of looking.

IV. Approaching Animals: A Question of Distance

Distance is the first point of issue when approaching animals: either there is not enough distance, and animals are anthropomorphized, or there is too much, and animals are alienated. Anthropomorphism refers to the attribution of human traits to animals wherein animals end up being obscured by the thoughts, feelings, and motivations we impose upon them. This becomes a kind of narcissistic projection, an overly simplistic interpretation of animals that denies them any autonomy.

Anthropomorphism makes animals meaningful only for humans, and not meaningful for the animals in and of themselves. Alienating animals, meanwhile, leads to their irrevocable estrangement from humans. Such an orientation operates under the assumption that there is an impossible communicative chasm between us. Unable to communicate on our terms, animals are understood to be wholly mysterious. Their behavior is reduced to a purely mechanistic functionality and dismissed as void.

Though anthropomorphism and alienation appear to be two extremes, they are both effects of anthropocentrism, which seriously underestimates the complexity of non-human being. We may have a natural inclination to be anthropocentric, but in ensuring that the human is the only kind of being worth knowing about, we are greatly reducing our ability think outside ourselves, to consider other modes of being in the world. Dominic Pettman (2011) terms such thinking the “human error”: a mistake we have never learned from and are destined to repeat until we acknowledge the magnitude of its omissions, and find new models and methods with which to think.

The solution however is not necessarily to do away with our selves; we cannot ever permanently escape our subjectivities, and it is not something to which we should aspire. However, as ecological critic Timothy Morton suggests, “hanging out in the

distance may be the surest way of relating to the nonhuman” (2007: 205). There is a need to occupy a place between anthropomorphism and alienation, what Weil calls “critical anthropomorphism.” In her book *Thinking Animal: Why Animal Studies Now?* Weil suggests, regardless of its dangers, anthropomorphism nevertheless cultivates attention toward animals based on a shared corporeality. The use of the modifier “critical” here is meant to ensure we are wary of our proclivity to favour our own position. It is a way to avoid presumption and over-identification with animals, and foster instead a way of relating that makes space for difference.

Such an approach Weil borrows in part from trauma scholar Jill Bennett’s “critical empathy,” which combines affect and critical awareness to foster an empathy “grounded not in affinity...but on a *feeling for* another that entails an encounter with something irreducible and different, often inaccessible” (qtd. in Weil 20, emphasis in original). It is a respectful response toward difference that does not involve enforcing similarities and equivalencies. In the spirit of remedying the human error, it lets animals “both be and become according to their own sense of time and place” (Pettman 199).

Though Weil does not mention him here, the concept of critical anthropomorphism was actually first introduced by comparative psychologist Gordon M. Burghardt (1985). Burghardt developed it as a provisional heuristic for approaching animals and their behavior. It was informed by integrating a variety of sources: an organism’s scientific and natural history, its unique physiology and sensory abilities, its perceptual processing capacities, and its local ecology to hypothesize what it might be like to be a particular animal in a given situation (Burghardt 2007: 137). But as Burghardt has himself suggested, the concept was significantly influenced by the work

of Uexküll, who helped found the modern field of ethology.

Ethology is the study of animal behavior that entails observation, measurement, quantification, and documentation of animals interacting with their environment. It produces knowledge based on these observations in conjunction with careful speculation informed by a familiarity with the organism's own specific physiology and biology. Uexküll's concept of *umwelt* has been highly influential, not only in the sciences, but in philosophy and media studies as well. It promotes a particularly non-anthropocentric, pluralist ontology of reality that not only makes room for non-humans but also for the possibility of their autonomy and ability to have meaningful relationships with their worlds. The notion of a subjective world was proposed as a counterpoint to Charles Darwin's concept of "milieu," which Uexküll felt emphasized far too much the power of external forces on animals (Pollmann 2013: 779). For Uexküll, organisms did not merely react to their surroundings they engaged with them, and actively shaped them. That is, animals communicated with them, suggesting that communication is not a process that happens between minds, but between bodies and worlds.

Critical anthropomorphism is, then, an ethologically inspired perspective that requires an attentive kind of looking. It attempts to be aware of its framings and limitations, and rests most comfortably on the surfaces of animals as they encounter things in their environments. However, it also acknowledges the polysemic nature of such surfaces, and encourages care and modesty in its interpretations. This realism of perspective, predicated on looking at phenomena as situated in elaborate worlds, from a place of curious unfamiliarity, is provocatively cinematic.

André Bazin considers realism to be fundamental to cinema. Realism, for Bazin is

less about achieving verisimilitude and more about cultivating faith in the world, something I will unpack in further detail later. Suffice to say, he maintains that cinema's essential realism is made possible expressly by the camera's non-human point of view. Uexküll's concerns about anthropomorphism parallel Bazin's: he was equally troubled by the risks of narcissistic projection onto worlds. His essays on realism valued filmmaking strategies that protected the unfamiliar world unfolding inside the filmic frame from being supplanted by an all too familiar human one. By emphasizing cinema's importance as a primary mode of worldly encounter, the essays also suggest something of what it is like to be an engaged spectator, sensitive to the conditions of filmmaking, the processes by which images appeared, and what they brought to bear on both the cinematic image and our understanding of the world.

This conceptual overlap between Uexküll and Bazin is unsurprising given that as aforementioned the camera figured significantly in Uexküll's ethology. As Pollman argues, Uexküll recognized that the camera may not be able to show an animal's true *umwelt*, but it could suggest glimmers of it as the animal comports itself within the non-human *umwelt* of the camera. In doing so, cinema helped establish a space for the animal, and provided a vector of communication along which Uexküll could travel between worlds.

Uexküll's scientific work thus indicates that studies of animals are irrevocably tied to media. Animals become topics for discussion in tandem with their visualization. Knowledge about them relies on their visibility, but that visibility in turn depends on their interaction with technologies that render them visible in the first place. When it comes to seeing animals, animal-media relations are almost always implicitly at stake. Yet these relations remain unacknowledged thanks to our perceptual blind spots, aided

by the modern insistence on human centrality and on the nature-culture divide. The following section will explore the histories of animal representation alongside the human desires and the technological affordances that motivate them. It will identify some of the troubling patterns in the ways animal representations have been understood and mobilized. Finally, it will attempt to restore the ontological plenitude of the animal image by proposing a cinematic, realist technique of looking.

V. **Animals and/in/of/for/as Media**

Animals matter to media in a multitude of ways. As the indelible Lascaux Cave paintings of Paleolithic bison indicate, animals were early subjects of what is understood within art history as the very first medium. That seems only just, given that animals also likely provided the blood to make the paint (Berger 5). From the very beginning, then, animals have been imaginatively, aesthetically, and materially implicated in media and culture—to such an extent that they are difficult to disentangle. Animals are at once the inspiration for media, the subject of media, and also the very substance of media. Media were integral to thinking about animals, and animals were also implicated in imagining media, and making media operations intelligible.

Animal images inevitably moved beyond caves to other canvasses, but as the history of painting suggests, animals remained popular and perennial subjects. Visualizing animals, even for strictly aesthetic purposes, cultivated desires and techniques to know more about them. In seeking to depict animals as accurately as possible, artists had to observe animals carefully and employ processes of contemplation and interpretation. As art historians and curators Louise Lippincott and Andreas Blühm suggest in their book, *Fierce Friends: Artists and Animals 1750 -1900*, French Baroque

painter Jean-Baptiste Oudry—well-known for his images of animals—not only had to document the strange bodily comportments of animals, but also had to figure out how to characterize and interpret their movements (34). In this instance, a concern about animal aesthetics invariably leads to epistemological and ontological considerations.

But epistemological and ontological explorations also lead toward animals. As the industrial revolution was well underway, modernity was changing the human experience of space and time to such an extent that life was at times incomprehensible. Animals appeared in part to make these changes intelligible and natural. At the close of the 19th century, for example, animals were appearing in symbolic forms at unprecedented rates. Akira Lippit identifies these appearances as hauntings, correlating their appearance with that of technology: “animals appeared to merge with the new technological bodies replacing them” (187). Thanks to the ascendance of the steam engine, horse-drawn carriages were being phased out. And yet, “plaster horses were mounted on tramcar fronts in an effort to simulate continuity with the older, animal-driven vehicles” (Lippincott and Blühm 187). In fact, early vehicles were even called “horse-less carriages” as if these new machines were lacking their essential animal component (Lippincott and Blühm 150). That the power of automobile engines is still measured in units of “horsepower” acts as a reminder of this residual animality.

New technologies ostensibly made animals obsolete. While animals disappeared from everyday life, Lippit argues, they reappeared in symbolic forms to haunt the physical spaces they once occupied. This is Lippit’s central argument in *Electric Animal: Toward a Rhetoric of Wildlife* (2000): all technologies bear the traces of “an incorporated animality” (187). He suggests that technological innovations were inspired

by animals, and eventually became substitutes for them. Animals became redundant; with nowhere to go, they simply haunted the cultural landscape.

Horses, for example, guided inventors like James Watt as he fine-tuned his steam engine, and Henry Ford when he built the Model-T (187). Other scholars affirm this move: elephants and other animals facilitated inventor Thomas Edison's cinematic experiments with electricity (Shukin 140). As Avital Ronell has suggested, Alexander Graham Bell's experience with sheep breeding sparked his desire to connect to significant incommunicable others, which in turn inspired his invention of the telephone (337). Animator Walt Disney used real live animals as models for his early animations, while a cat was central to physicist Erwin Schrödinger's famous thought experiment (Lippit 187). Muybridge's Zoopraxiscope (literally "animal action viewer") was crafted in the service of capturing animal locomotion. These animal inspirations are not tertiary to but rather elemental to these technologies of transportation, communication, and representation. In the end, Lippit believes animals have infused these technologies with their spirits; as such, media technologies serve as archives for lost animal presence.

To be sure, Lippit's thesis holds some sway. Animals did inspire modern representational technologies such as photography and motion pictures. In *Animals in Film*, Jonathan Burt argues that early developments in still and moving picture technology provided answers to questions provoked by animal movement (2002). The cultural fascination with horses offers a particular case in point. Because the strength and speed of their bodies were vital to land transportation, governments, merchants, and racehorse owners were preoccupied with the analysis of horse motion. Meanwhile, "artists were given the impossible task of representing actions that occurred too fast for the unaided eye to see" (Lippincott and Blühm 132). That is, until Eadweard Muybridge

met Sallie Gardner, Leland Stanford's horse, and with her gallop they set astir a proto-cinema that became the bedrock for modern visual culture.

The interest in recording the movement of animals was synonymous with the desire to make movement visible and comprehensible. It transpired at a time when rationalizing and controlling movement itself was becoming a pressing concern for governing populations and facilitating capitalism. For Uexküll, for example, the camera made visible the "coordinates" and "amplitudes" of animal movement which helped him to conceptualize his theory of movement as "an organized reaction to stimuli" (Pollmann 2013: 791). Meanwhile for Muybridge and Étienne-Jules Marey, recording animal locomotion demonstrated that movement was reducible to its unfolding in space and time: it was therefore a phenomenon that could be captured and rationalized.

The imperceptibility of animal motion created a demand for more efficient cameras and faster film speeds that could capture what the human eye could not. Animals encouraged film to adapt, and film in turn reinforced "the animal's own potential for novelty and its power to fascinate" (Burt 2002: 85). Animals' contribution to still and moving photography is further reified by the fact that gelatin made from the bones, skins and tendons of horses and cows were also fundamental to the processing of film stock (Shukin 104).⁴ The animal materiality of film stock was essential to the film image, but that materiality was hardly passive and inert. As Shukin recounts, during "the great emulsion debacle of 1882" a number of Eastman plates were ruined thanks to impurities in the gelatin, which eventually led to more consistent manufacturing

⁴ And not just the animals themselves, but what they ate and how they lived. As Hollis Frampton playfully points out, the Eastman Kodak Company insisted, "the very best photographic gelatin is made from selected ear and cheek clippings of Argentinean beef cattle that are fed on mustard greens" (2004: 9). Shukin affirms this: cattle fed mustard seed produced gelatin that could yield better film speeds, and as such mustard became an important part of the film emulsion formula (109).

standards (108-9). Animal dynamism and contingencies not only gave form to cinema, and helped make movement intelligible, they also literally gave it substance.

Media may have a long history of representing and incorporating animals, but animals also represent and incorporate media effects. More specifically animals “monstrate,” or show the possibilities and limits of media.⁵ Topsy, the unruly pachyderm, for example, disclosed the dangers of alternating current in Thomas Edison’s *Electrocuting an Elephant* (1903). Nipper, the Jack Russell terrier, in listening to recordings of his dead master’s voice over a phonograph, illustrated the device’s impressive technical fidelity. Animals did not just show media, they made its productive affects and sensations intelligible.

This mimetic power also meant that animals literally became media themselves, storing and transmitting otherwise inaccessible information. The canary in the coalmine is the most notable example of this. Canaries were commonly used in coal mining practices as early detectors of carbon monoxide in the atmosphere. While they have since been replaced with technical sensors, animals remain significant sentinels for human and environmental health. The supra-human perceptual acuity of many animals is essential in laboratories, pollution zones, and even on city sidewalks as guide dogs act as perceptual proxies for the visually impaired.

Thus Lippit is not wrong: as this brief and tangled history suggests, animals matter to media, technology, and culture in a myriad of ways. But Lippit sees animals as far too easily incorporated into media technologies, when the relationship is more

⁵ As André Gaudreault (1990) has posited, “monstration” is a pre-narrative layer of cinema onto which more complex narratives are built. For example, while the early cinema of attractions does not “tell” stories as such, they nevertheless “show” something at the very least. Nicole Shukin (2009) has since likened animals’ capacity to show the possibilities and limits of technology to the way cinema itself monstrates.

complicated and nuanced than that. What Lippit's position fails to grasp are animals themselves as living, breathing, irreducible beings that did not merely disappear and become obsolete with the emergence of technological modernity. For Lippit animals exist only in correlation with the human imagination, and do not exist beyond it. As such, animals are only ever as they are imagined. This is not just Lippit's problem, but a systemic problem underlying much of the literature on animals in culture: it is informed by an insidious anti-realist paradigm that reduces the possibilities for making sense of animals, and of non-humans more generally.

VI. "Animetaphors:" Animals in Concept Spaces

Animals may be a perennial topic in the literature of the social sciences and humanities but they are hardly present there. Much of the literature, Cary Wolfe remarks, treats "the animal as primarily a theme, a trope, metaphor, analogy, representation, or sociological datum" (2009: 567). That is, animals are positioned as matrices where "relations of class, or race, or gender get played out and negotiated through the symbolic currency of animality and species difference" (Wolfe 2009: 567). "Western thought," poet and playwright Jean-Christophe Bailly concurs, has armed itself, "less by erecting self-enclosing walls than by confining animals in vast concept-spaces from which they are not supposed to be able to exit" (4).

Inside such "concept-spaces" animals are reduced to exemplary forms, and denied their own spatial and temporal destiny. Mullarkey calls this treatment, "philosomorphism," whereby animals are used merely as means to the ends of human thought. As Silver Rattasepp has so succinctly put it: whenever animals are mentioned it is rarely "as living representatives of nonhuman modes of being, of alterity, of a life

that is not human” (29). What he means is that there is a paucity of real animals in the writings about them. Animals may figure at central or peripheral points of discussion but they tend to remain exactly that: figures. From Wittgenstein’s lion to Schrödinger’s cat to Deleuze and Guattari’s “becoming-animal,” the animal is arbitrarily invested with meaning, cut to the measure of a philosopher’s scheme.⁶

The metaphorical or figural animal is positively primeval. As John Berger has speculated, animals were the first metaphor. Because their lives are separate from humans, but unfold in parallel, “the essential relation between man and animal was metaphoric” (5). Thus animals have long been an ideal proxy for human beings. Lippit certainly agrees: animals were once “considered a *metonymy* of nature,” a kind of shorthand for the natural world as a whole. But now, he explains, animals have come to be seen as *emblems* of the new industrial environment,” symbols of the decidedly unnatural (187, emphasis mine). They became a crucial (though clearly a flexible) metaphor for articulating whatever with which they have been tasked.

So useful are animal metaphors that Lippit posits that animals are inherently metaphoric. He replaces the term “metaphor” with “animetaphor” because the animal is “already a metaphor, the metaphor an animal. Together they transport to language, breathe into language, the vitality of another life, another expression: animal and

⁶ In Erwin Schrödinger’s famous thought experiment, the cat hidden inside the box is denied any sense of reality. It is paradoxically dead and alive at the same time. While we know it can be one or the other, the only sure way to know the cat’s fate is to actually open the box, to see it and in turn establish its relationship to the world. Meanwhile, Deleuze and Guattari’s clarion call for “becoming-animal,” Donna Haraway complains, is marked by their “profound absence of curiosity about or respect for and with actual animals” (2008: 27). Instead they reduce animals to “relentless otherness knotted into never fully bounded or fully self-referential entities” (2008: 27). They encourage humans to use the energy of the protean animal pack, but in doing so they end up privileging the fantasy of a “pure” animal. Their disdain for the family pet by contrast for being so oedipalized and diminished, completely elides the presence of real animals and shuts down any possibility of really seeing animals in their singularity and autonomy (2008: 28).

metaphor, a metaphor made flesh” (Lippit 165). Lippit’s proclamation illustrates quite effectively why the metaphoric animal is so persistent: its inexhaustible mutability means it is a selfless receiver of whatever meanings we need it to bear. A dog, for example, can be “man’s best friend,” a symbol of faithfulness and companionship, but if a place has “gone to the dogs” the dog becomes a sign of deterioration. “Every dog has its day” places dogs as carriers of good fortune, and yet a “dog’s life” is one that is sad and unlucky. Meanwhile “A dog eat dog world” implies one of vicious competition. Though it may be a convenient cipher, the dog itself is hardly there, and it becomes increasingly meaningless with every iteration.

Animals may be appealing and generative philosophical figures, but only at the expense of their ontological specificity and plenitude. Animals might be missing in the writings about them, but this absence is not a direct result of something endemic to writing as mode of expression. Rather it is a result of a worldview that is deeply anthropocentric and correlationist.⁷ An approach that not only presumes human exceptionality, but also presumes that being and human thinking are inextricable from one another. Appreciating animals as singular, more-than-human beings with unique capacities for action and meaning-making can help foster new ways of perceiving reality and produce new vistas of knowledge. In order to begin this process however, it is necessary to look at animals and acknowledge their presence in the visual field--for it here that it is persistently thwarted.

⁷ Correlationism, as Quentin Meillassoux defines it, is “the idea according to which we only ever have access to the correlation between thinking and being, and never to either term considered apart from the other” (5).

VII. Everywhere Animals (Dis)Appear

“Everywhere animals disappear,” proclaims Lippit in the haunting opener of *Electric Animal* (1). The line is rendered all the more powerful by the fact that it is a reiteration of John Berger’s very same decree published nearly three decades earlier. This echo is indicative of the extent of Berger’s influence on discussions of animal presence—or rather, lack thereof—in the visual culture of modernity. This relentless preoccupation with animal disappearance is a symptom of a series of much larger problems: the overall devaluation of animal images, the denial that the aesthetics of animal images have anything to do with the conditions of their creation, and finally the diminishment of real animals outside of their material or symbolic use value for humans.

It is also, as Burt suggests, demonstrative of the ways in which other scholars in the field have uncritically taken up Berger’s work. This recurring preoccupation with absent animals has prompted Burt to observe that the history of the appearance of animals in culture is equally a history of their disappearance (2001: 203). For him, there are two ways of understanding this vanishing: the first is the actual extinction of species due to habitat destruction and overhunting. The other is a discursive or rhetorical effacement whereby real animals and their cultural traces are eclipsed by signs and metaphors, reduced to unresponsive sites for the inscription of human characteristics or meanings (Burt 2001: 204).

To be fair, animals are in fact disappearing. Millions of livestock animals die every day, animals deemed as pests are exterminated, while others are wiped out by legal and illegal hunting practices, and disruptive industrial processes such as deforestation, pollution, and climate change. Currently, biodiversity is under threat, and

a number of species are critically endangered, while swathes of others have become extinct. This precarity suggests that animals and technology are caught up in a combative pas-de-deux, where technology inevitably leads the dance. “It is a cliché of modernity,” Lippit remarks, that “human advancement always coincides with a recession of nature and its figures” (1). The late 19th and early 20th centuries, with their accelerated processes of industrialization, urbanization, and transportation, are largely understood as leading a large-scale destruction and marginalization of animals, and nature more generally. And as real animals began to disappear, both Berger and Lippit argue, they reappeared as the subjects of representational media.

There is, then, the reasoning goes, a negative correlation between the appearance of animals in visual representations and the actual disappearance of real animals under capitalism. Berger remarks, “zoos, realistic animal toys and the widespread commercial diffusion of animal imagery, all began as animals started to be withdrawn from daily life” (24). Thus, animal appearances in modernity came to “constitute the living monument to their own disappearance” (Berger 24). Lippit restates this point. Remarking on the popularity of animals as subjects of technological content in the 20th century, he surmises that technologies served as “virtual shelters for displaced animals,” and came to be mausoleums for animal being (187). Real animals disappear only to reappear in images; in this process of transfer however, the animals have lost their ontological plenitude.

For both Berger and Lippit, images can only ever mean death, emptiness, and loss. It is a decidedly Baudrillardian maneuver: images of animals are not just poor substitutes, but “murderous”: their very existence effectively diminishes and replaces real animals. Even those animals that remain, whether as pets in human homes, captive

animals in zoos, or feral urban creatures like pigeons, raccoons, and squirrels, are nothing but empty simulacra. While they may look like real animals, they are not. As Berger insists, “nowhere in a zoo can a stranger encounter the look of an animal. At the most, the animal’s gaze flickers and passes on. They look sideways. They look blindly beyond. They scan mechanically” (26). The animal has been so marginalized by modernity that it no longer imposes any kind of presence. More importantly it cannot return our gaze, reaffirm our existence, and as such has become null and void.

The point of contention here is not that animals are disappearing—indeed they are—it is the denial of the animals that are, despite everything, appearing. Animals may indeed be marginalized by modernity, but the scholars writing about these animals are only marginalizing them further by disavowing their continued appearances. To insist that animals are disappearing, or to deny that the animals that appear are not really there, is to misunderstand animal imagery, the processes in which it is made, and its relationship to animal ontology. It is to abandon the aesthetic reality of the image in favour of the psychological desire for the human meaning beyond the image. What Berger and Lippit deliver is a decidedly anti-visual and anthropocentric position. The aesthetic is the mode of first encounter by which animals become available to the senses, where animal being is presented to us. It is imperative to understand where this iconophobia comes from, and make allowances for a more meaningful aesthetic appreciation of animal imagery.

VIII. Iconophobia, or Melancholy and the Infinite Sadness of the Animal Image

The sense of foreboding that accompanies discussions of animals in modernity, Burt observes, is “marked by the arrival of the image itself” (2002: 27). Loss, pessimism, and austerity may mar the animal image, but it is by virtue of its very status as an image. The assumption that the enhanced visibility of animals is a portentous sign of their disappearance, Burt reads as Berger’s legacy (2005: 213). But this anti-visual position runs even deeper than Berger. It is partly inherited from the larger “iconophobia” that Martin Jay (1993) identified in 20th century continental theory. This anti-visual current manifests as a general distrust of images because of their alliance with uneven relations of power, discourse, and ideology.

Such skepticism of appearances, for example, runs throughout the work of Michel Foucault who insisted that, “visibility is a trap” (1995: 200). For Foucault, looking always presumes a skewed power dynamic, wherein only the one looking is the one in control. To be looked at is to be disciplined, to be wholly captured by an administrative gaze. Laura Mulvey identified this dynamic in cinema especially. In “Narrative and Visual Pleasure” she describes how cinematic apparatus inherently functions like the unconscious of patriarchal society. Women are therefore powerless and passive materials worked on by the penetrative power of the male gaze. While this anti-visual attitude has fallen out of favour in recent years, it clearly remains popular in discussions of animals in visual culture. Unequal relations of power have stratified the visualization of animals where humans are believed to be in full control of the processes of looking and image making. Meanwhile, animals are reduced to docile objects, pacified by rhetorical strategies of power located beyond the image. The image itself, its aesthetic

qualities, and the animals' own participation in their creation, are neglected and often altogether disavowed.

However, this anti-visual position with regards to animal imagery might more accurately be understood as a discomfort with the technological mediation of nature more generally. Animal images, owing to their means of production, inevitably signal an encounter between animals and media and as such manifest an uncomfortable mingling of two perceived distinct ontological zones: non-human nature and human culture. As Bruno Latour suggests, modernity itself is constituted by the relentless struggle to distill the world into these zones, and maintain their separation. The austere attitudes toward animal images can be read as a function of this modern process of purification. Animal images are understood as signs of wrongful—read: too intimate—relations between nature and culture.

Discussions of animals in visual culture do have a tendency to privilege unmediated encounters. As Randy Malamud argues, “media supplant a simple, direct, meaningful engagement with the natural world and its creatures” (2010: 6). But it is not just technological mediation that seems to be at issue, but techniques of display more generally. In his critique of modern zoos, for example, Ralph Acampora argues that animals are erased by their visibility, in a process he calls “extinction by exhibition” (1998). The very act of framing animals is thus perceived as having a diminishing effect.

In some cases, the human gaze itself is understood as a particular kind of technique, and is thus denigrated. Malamud insists that the human gaze is profoundly and irreparably exploitive, so much so that the only way to protect animals from it is for us to look away (2012: 114). For Malamud and Acampora, animal images are evidence of animals having been torn from nature and re-inserted into the more artificial context of

culture. This tearing is unequivocally violent, because in the service of separating nature and culture they have to be understood as oppositional. Nature is perceived as disinterested in relation to human culture, and therefore any engagement with it is presumably performed without its consent. Not only are discussions of animals anti-visual, they are also prominently anti-realist, set on keeping nature and culture safely apart.

Cinematic realism emerges as a salve for this anti-visual idealism: it can draw attention to hybridity, heterogeneity, and moments of overlap between nature and culture, animals and media. Rather than looking away from unseemly juxtapositions, it is necessary to attend to interactions between nature and culture as incidents of lateral creation rather than top-down destruction. In order to think what we would not otherwise think, we must see what we would not otherwise see. The continued abstraction of animals by identifying them as an innocent standing reserve for human visual expression over-emphasizes their passivity and amenability to human instrumentality and rationalization.

Animals are not fully determined by the position they are placed in by humans. The example of the macaque monkey who opened this chapter certainly testifies to this. As Burt suggests, animals do participate in their own representation (2002: 30). This participation is not something projected onto the imagery, but can be apprehended at the level of the imagery itself. As an example, Burt offers up a scene of Lassie climbing out of a river. Lassie has not been merely coerced into acting a certain way; rather

Lassie is in fact doing all sorts of things: responding to his training; utilizing his understanding of the context in which he is placed... filmmaking of this kind using animals is only possible because the mutual gaze between human and animal is at some level comprehensible for both parties. (Burt 2002: 32)

No matter the distribution of power, an animal is not fully absorbed by human will, but bears some kind of autonomy that cannot be fully subsumed. What needs to be recovered in animal imagery is the animal's contribution to the production of the image.

What is required is to get away from the purely textual, representational, and metaphorical animal. If an image's meaning is only ever outside the image, images are denied specificity, connectivity, and reflexivity, and can take on any number of meanings. As a result, Burt warns, the animal in animal imagery runs the risk of perpetually becoming "an overly free-floating signifier" (2002: 27). Topsy, the elephant featured in *Electrocuting an Elephant*, has, for example signified for Edison, the destructiveness of alternating current, and the novelty and success of his own cinematographic technology. Meanwhile for Lippit the elephant symbolizes the incorporated animality that continues to haunt cinema (187). For Shukin, Topsy represents the animal affect that energizes and naturalizes industrial capitalism. Topsy has also come to mean elsewhere a combined affirmation of human cruelty, the vulnerability of nature, the shock of modernity, the state of post-colonial racial politics, the affective immediacy of technological communication, and the concession of animal life to technological systematization (see Doane 2002: 152; Shukin 141, 154; Lippit 197). In these cases, the specificity of Topsy is entirely eclipsed by the animal's psychological, discursive, or ideological functions.

Conceptualizing the animal in animal images as a passive, pitiful victim, as "an object without resistance," constitutes a disengagement from the animal itself, Burt writes (2002: 29). Furthermore, "its reduction to pure sign, *reinforces* at a conceptual level the effacement of the animal that is perceived to have taken place in reality even whilst criticizing that process" (Burt 2002: 29, emphasis in original). So while many

scholars writing about visual animals are staunch critics of the ways in which animals are exploited and undermined by humans, they end up reinforcing this effacement by disavowing the actual presence and agency of animals in animal imagery.

This contradiction makes for a circular logic. It enforces a kind of Foucauldian “repressive hypothesis”: when the animal is subjected to visualization technologies, the animal is diminished. The resulting image is therefore lacking in ontological plenitude but that in turn enables it to become an inexhaustible wellspring for a myriad of discourses about animal victimization and human aggression. Moreover, in an added twist, visualization is not just the symptom and the cause of animal oppression; it is also its solution. Burt is quick to point out, for example, that despite Berger’s disavowal of images, his essay makes ample use of them. He has elsewhere noted, as have Richard Grove and Hilda Kean, that wildlife conservation and animal welfare movements have long been indebted to the mobilization of animal images in print, photography, and film (Burt 2001; 2002; 2005; Grove 1995; Kean 1998). What this suggests is that no matter how much animals in the visual field are denigrated, they are not something we can really ignore. Animals must be confronted and addressed, but this is not without its problems. Too often we look at animals in the hopes that we will see them look back at us.

IX. Human-Animal Gaze: From the Cradle to the Grave of Human Thinking

The look between an animal and a human excites a complex geometry of sightlines. If one were to map it out, it might look like the pattern of a cat’s cradle. In this game of looking, gazes are like threads, reaching outwards, circling back, and

yoking the players together with the pull of their mutual entanglements. “That look between animal and man,” Berger writes, “played a crucial role in the development of human society” (26). Berger bemoans that industrial capitalism and technological modernity have “extinguished” that formative look. They have marginalized animals to such an extent that “nothing can any more occupy a *central* place in their attention” (Berger 26, emphasis in original). He means of course that *humans* can no longer occupy a central place in their attention.

Berger supposes that we look at animals because “the animal has secrets which, unlike the secrets of caves, mountains, seas are specifically addressed to man” (3). Man became aware of such secrets, he alleges, “as soon as he intercepted an animal’s look” (4). Though he writes from a place of concern for animals and their exploitation under capitalism, this concern is revealed to be a self-interested one. As Burt critiques, Berger is not mourning the loss of animals so much as he is the loss of his own inability to receive external affirmation of his being in the world (2005: 208). It is not the fate of animals in and of themselves that Berger cares about; rather it is what their fate will come to mean for him, and human beings more generally. If animals mark the point at which we differentiate and validate ourselves as human, then without animals, we must struggle to find a new mirror onto which to cast our reflection. Animals serve all kinds of purposes for humans, but the most powerful is their psychological and existential purpose.

After all it is not the actual death and maltreatment of animals that Berger grieves, but their conceptual death, them not being there in the ways we want them to be. Thanks to their visualization in photography, film, television, advertising, zoos, and even as pets in human homes, Berger insists that it is no longer possible for humans to

experience direct, unmediated encounters with animals. However, what Berger fails to realize is that human vision is itself a technic of visualization. It always mediates the human-animal encounter—and as Berger inadvertently shows—to anthropocentric effect. Human optics is rigged and not even the most careful deconstructionist can resist its pull.

Jacques Derrida, following from Berger, also takes the human-animal gaze as constitutive of human being. He argues in *The Animal That Therefore I Am (More to Follow)*, that these tautly entwined lines of sight form a sturdy, protective cradle that not only supports thought, but also acts as its very origin. For him, the mutual gaze between an animal and a human is the very primal scene of thinking (Berger and Segarra 7). Derrida's realization, unlike Berger's however, is inspired by an actual physical encounter with a live animal: his feline companion, Logos.

As Derrida asserts, “the cat I am talking about is a real cat, truly, believe me, *a little cat*. It isn't the *figure* of a cat. It doesn't silently enter the bedroom as an allegory for all the cats on the earth, the felines that traverse our myths and religions, literature and fables” (6, emphasis in original). One morning while standing naked in his bathroom, Derrida inadvertently meets the cat's gaze. Not only does he see the cat, he also sees the cat seeing him. In turn, he imagines himself as seen by her. “The animal looks at us,” Derrida writes, “and we are naked before it” (29). When we look at an animal, he suggests, we not only awaken to the existence of another, animal mode of being: we also awaken to ourselves. The animal sees us naked, sees our very essence, our vulnerability and mortality, regardless of our pretensions otherwise. In this moment of encounter and mutual recognition, both the animal and the human are called into being, to and for one another.

While Berger longs wistfully for this look of affirmation, for Derrida the experience is much more unsettling. Being seen naked by his cat he confesses, “I hasten to cover the obscenity of the event, in short, to cover myself. One thought alone keeps me spellbound: dress myself, even a little, or, which amounts to the same thing, run away” (10). He equates the shame of his own nudity with Adam’s mythic shame, the moment of self-consciousness when he realized he was finite and imperfect. The cat sees Derrida as he is; it is indifferent to his knowledge, his self-consciousness, and his perceived superiority. This shakes the very foundations of difference upon which Derrida’s (and human) subjectivity is built.

His encounter in the visual field presents an exciting opportunity to follow a real animal, elsewhere. It demonstrates the value inherent in looking at real animals, and allows for the possibility of their ontological plenitude despite their perceived lack of language. For Derrida there is a possibility of thinking the absence of language as “something other than a privation” (Derrida 48). Animals suggest other modalities of being in the world and that thinking may not be solely the province of an articulable human subject. In their introduction to *Demographies: Thinking (of) Animals After Derrida*, Anne-Emmanuelle Berger and Marta Segarra emphasize that it is the cat that is granted the initiative of the look, and the process of thinking. They note that Derrida

uses an impersonal phrase: thinking begins there. Which could mean two things at once: 1) that the cat herself may begin to think there as well as the human, 2) that ‘thinking,’ contrary to what Descartes and most of the philosophers think, does not necessarily or uniquely involve a thinking “I.”
(7)

Derrida also recognizes that though the cat's interiority is not accessible to him, the very event of her gaze guarantees its existence. The gaze is the consequence of a play of motivating forces that acts outside language, and exists with or without the human.

Derrida starts out toward new terrain outside the limits of human knowing when he follows the animal. However, he ends up circling back toward himself. As Burt remarks, Derrida's journey may begin with the enigma of the animal but it ends with human subjectivity (2001: 205). Though his encounter has a deflationary effect on the human, the episode is still mobilized within a larger discussion at which human being occupies the centre. Haraway reproaches Derrida for not considering how to return the look because, "somehow in all this worrying and longing, the cat was never heard from again." (2008: 20). He stopped short of

the risky project of asking what this cat on this morning cared about, what these bodily postures and visual entanglements might mean and might invite, as well as reading what people who study cats have to say and delving into the developing knowledges of both cat-cat and cat-human behavioural semiotics when species meet. (Haraway 2008: 22)

Though he attempts to acknowledge the real, living, breathing, fully dimensional cat before him, as Shukin reiterates, the animal "is transubstantiated...into one figure in a line of suspenseful figures emptied of historical substance and summoned to deconstruct ontotheological 'signs of presence'" (37). The cat in particular is transformed into an animal mode of being, in general. By situating her as a provisional placeholder for significant otherness, the complexity and distinctiveness of her presence is reduced and lost to Derrida's analysis.

While this cat's cradle of gazes may generate and support the mobility and velocity of thinking, it also acts as a trap. It ensures that all lines of inquiry are circular,

tethered to and reinforced by a human-animal binary, one that invariably returns to the human. This return is, as Agamben notes, endemic to human being itself. When Carolus Linnaeus coined "*Homo Sapiens*," Agamben remarks in *The Open: Man and Animal*, he offered it as a tacit category meant to anchor the human as the fundamental point of reference for species difference. This is evidenced by the fact that he did not provide any identifying characteristics of species for humans, as he did with all the others. What he did include is the now famous adage, "know thyself" (2004: 25). Agamben takes this as an indication that *Homo sapiens* does not designate so much as it creates: it is a machine "for producing the recognition of the human" (2004: 26). Man, he concludes, "has no specific identity other than the *ability* to recognize himself" (Agamben 2004: 26, emphasis in the original).

This mechanism of self-recognition he calls "the anthropological machine." He notes elsewhere that the term "species" is derived from the Latin *specere* meaning "to look, to see." Therefore, the concept was "first defined as that which makes visible and only later became the principle of classification and equivalence" (Agamben 2007: 58). The very origin of species as a concept marked at the same time the moment when aesthetics became implicated in ontology. The constantly shifting mobile boundary between the human and the animal demonstrates not only the fluidity of aesthetics, but also its significance, and its stakes.

The anthropological machine is, then, an optical machine, made up of mirrors to ensure that a human being "sees his own image always already deformed in the features of an ape" (Agamben 2004: 26-7). In order to belong to the human, to belong to the category of *Homo sapiens*, one must first recognize herself in a nonhuman (Agamben

2004: 27). Therefore, human vision is fixed to favour self-recognition and self-distinction. Berger succumbed to it, and not even Derrida could elide it.

While Agamben sees this self-involvement as inherently human, all beings bear this tendency for self-centeredness, as Uexküll suggests. Because of the intimate relationship between subjects and their environments, human beings are inclined to see the world anthropocentrically. It is the native logic of all living things. Yet, it is not the only possible logic of looking. Temple Grandin, for example, claims that her autism grants her a phenomenological ability to experience the world as animals do, because like many animals, she processes sensory information in pictures and not with language.⁸ This relationship to animal phenomenology makes her especially suited to design animal enclosures and slaughterhouses in more humane ways, i.e., ways that ensure spaces are less distressing and more inviting to animals. She relates an instance early in her book *Thinking in Pictures* where using a camera and sequential photography is also part of her process:

I used a camera to help give me the animals' perspective as they walked through the chute for their veterinary treatment. I would kneel down and take pictures through the chute from the cow's eye level. Using the photos, I was able to figure out which things scared the cattle, such as shadows and bright spots of sunlight.
(4)

The presence of the camera here is suggestive of the possibility of the camera's non-human visual technics to provide new horizons of understanding, and what they can suggest at the limits of the human *umwelt*.

⁸ John Mullarkey argues, film itself is “animal thinking...the force of cinema simply is the power of the animal that we (always) are when we think in images, or when images think immanently within us” (12). That cinema addresses us as the animals that we always already are. Mullarkey insists, then, that to think in moving images is to think as animal, not in a linguistic register but first, from the place of aesthetics.

X. Cinema as a Non-Anthropological Machine

All of the arts are based on the presence of man, only photography derives an advantage from his absence.

—André Bazin, from “The Ontology of the Photographic Image” in *What is Cinema? Vol. 1* (13).

Human vision brings the human *umwelt* into view; and the world in our sights is beholden to the human perceptual system. Photographic media by contrast can bring other *umwelten* to our attention, through and with the *umwelt* of the camera, which offers glimmers of other worlds that are not made manifest by the human body. This non-human remove of the camera was what made cinema so important to Uexküll’s notion of *umwelt*. The possibility of a non-anthropocentric orientation was essential to his ethological renderings of animal worlds. Uexküll describes his *A Foray Into the Worlds of Animals and Humans* as a travelogue; cinema contributed to his ability to move through strange worlds.

Even Uexküll’s description of the *umwelt* specifically conjures the cinematic experience: the reader is asked to imagine a flowering meadow full of insects and butterflies and then make

a bubble around each of the animals living in the meadow. The bubble represents each animal’s environment and contains all the features accessible to the subject. As soon as we enter into one such bubble, the previous surroundings of the subject are completely reconfigured. Many qualities of the colorful meadow vanish completely, others lose their coherence with one another, and new connections are created. A new world arises in each bubble. (43)

As Pollman remarks, what Uexküll is relating is a uniquely cinematic scene, one akin to the spectator’s experience in the movie theatre. This is hardly a coincidence: cinema provided the material and imaginative possibilities for his very concept of *umwelt*. After training with Étienne Jules-Marey for several months Uexküll, she explains, went on to

use still and moving chronophotography to bridge the “theoretical impasse between external determination and internal subjective autonomy” (Pollman 2013: 780).

Photography was auspicious because of its unique, automatic mechanism. It not only “restricted its information to the surface, the externally visible, with hardly any interpretive work...it also supposedly depicted its object independent of human perception” (Pollman 2013: 788). The camera’s automatism, brought an autonomous world into view.

Owing to this automatism, the camera was able to intervene in the human *umwelt* and offer diffracted glimpses of other worlds, nested within our own. This created new opportunities to perceive, communicate, and establish relationships with worlds we would not have known existed otherwise. While cinema was very influential to the development of Uexküll’s ideas, Pollman argues, his ideas in turn offered a dynamic theory of worlds and world-making that was equally influential to film studies. For the *umwelt*, she writes,

goes beyond the conditioning aspects of the relationship between organism and environment and encompasses the effects on perception of specific bodily compartments, the translation of stimuli into signs, and the capacity to inhabit new *umwelten*. (2013: 783)

The concept helped to articulate more effectively cinema’s status as a significant component of the modern environment. The dynamic relationship between organism and *umwelt* provided a productive analogy for the similarly dynamic relationship between spectator and screen. Because *umwelt* assumes that the organism actively engages with, makes meaning from, and transforms its environment, it was possible to assume that the spectator could confront cinematic worlds onscreen and interact with them in similarly meaningful ways.

Umwelt created an opportunity to imagine cinema's grander potential as a medium for sensory recalibration, engagement, and transformation. Though Uexküll is never explicitly cited by scholars writing about cinema, his impact is still legible there. Pollman identifies and traces Uexküll's influence in the writings of Walter Benjamin, particularly in his notion of the camera's "unconscious optics." As Benjamin writes in his mechanical reproduction essay, "a different nature opens itself to the camera than opens to the naked eye—if only because an unconsciously penetrated space is substituted for a space consciously explored by man" (236-7). Benjamin's idea that the world of the camera emerges in juxtaposition with our own familiar world is evocatively uexküllian.

There is also a resonance between his work and that of Siegfried Kracauer, Stanley Cavell, and most importantly for this discussion, André Bazin. While not directly influenced by Uexküll, these writers all value cinema as a world-viewing and world-disclosing medium, a value that is conditional upon the camera's automatism. For Kracauer this mechanism is what facilitated cinema's redemption of physical reality, Meanwhile, for Cavell, by offering "successions of automatic world projections," cinema is able to show the world itself, unburdening us from the burden and limitations of having to imagine it ourselves (101-5). For Bazin in particular cinema's unique ability to bring worlds in communication with one another stems from its nature as this non-human technic. The cinema can inquire into the limits of human sensory space, enable the expansion of vision and experience, and also affirm the ontological value of the worlds it brings into being because of its distinctive mechanical remove.

The material architecture of the cinematic apparatus, though often sympathetic to the capacities of the human sensorium, is non-human. Its operations exceed human

capacities. The human might engage the camera, but it is the negotiations that transpire between the camera and the world that ultimately produce cinematic images. As much as it is mobilized for human ends, the camera's slippage from human control is so fundamental to filmmaking, that it makes cinema at its base a non-anthropomorphic medium. This in turn, grants it the possibility to glean a non-anthropocentric perspective. This is ultimately what makes cinema a realist medium, as Bazin famously insists. For Bazin, realism is not so much a style as it is an outcome made possible by the filmmaker's respect for camera's internal, centrifugal dynamic, its "movement toward the real" (Bazin 1973: 85). His writings on cinema indicate that it is the medium's unique non-anthropomorphic framing that makes the trajectory toward the real possible.

Its disinterestedness in the human is what allows cinema to bring unexpected phenomena and "the reciprocal interplay of seemingly incompatible elements" to our attention (Bazin 2005a: 130). As he describes in his discussion of Robert Bresson's *Les Dames du Bois de Boulogne*, "The rain, the murmur of a waterfall, the sound of earth pouring from a broken pot, the hooves of a horse on the cobblestones," are not there to serve as a contrast to the more artificial aspects of the film. Rather, they are there because they were invited in "as foreign bodies, like a grain of sand that gets into and seizes up a piece of machinery" (2005a: 131). He describes these non-human elements as neutrals. They do not so much exist as offer a counterpoint to the human, as they provide elements that grant a solidity to the cinematic world, like "lines drawn across an image to affirm its transparency" (2005a: 131).

Bazin was especially interested in these interlopers, foreign objects, forces, and bodies: especially when they were non-human animals. Animals in particular testified to

cinema's openness to contingencies, otherness, and to the world. Animals were, for Bazin, significant guarantors of the real, making manifest the ontological realism of the cinematic image. His description of the inclusion of these non-human foreign bodies as grains of sand that seize up "a piece of machinery" though inadvertent, provides a provocative suggestion that they also function as saboteurs of Agamben's anthropological machine.

XI. The Ontological Richness of the Cinematic Animal

That the most nuanced, provocative writing on animal imagery is located in the annals of cinema studies is no coincidence. Cinema has been dealing with the ontological status of representations, animals or otherwise, and their relationships to the real since medium's inception. It has been dealing with differences in perspective, and distinctions not just between photographic reproductions and other kinds of imagery, but also between still and moving photographic representations. Roland Barthes (1977) identified the power of the cinematic image in what he called its "third meaning."

The first order of meaning is informational, the second order is symbolic and obvious, but the third meaning Barthes describes as "obtuse." It is "discontinuous, indifferent to the story and to the obvious meaning" (61). This third meaning, which cannot be articulated, is auratic and belongs only to cinema (66). It is a meaning that exceeds our ability to contain it, and thus compels us into persistent attention: it opens the "field of meaning totally, that is infinitely" (Barthes 55). Barthes argues this extra meaning is what makes a film still less a sample of film and more of quotation: a distilled and amplified selection that gestures toward and also carries with it an

inexhaustible meaning in itself (67). If the cinematic image already bears an excess of meaning, the cinematic animal image is all the more excessive.

Cinema is particularly equipped to entertain animals; they have been implicated in cinema since its very beginning. Cinema was born, as Paul Sheehan reminds, “with the movement of animals—a horse jumping, a seagull in flight, some fish swimming in a tank, a cat licking its paws and drinking from a bowl” (119). Cinema’s own success and novelty as a medium was significantly entwined with the contingencies and indeterminacies of animals and animal life. The animal in cinema made the more-than-human aspects of reality visible, movement especially.

As Barthes suggests, cinema’s movement is not always so specific or literal, but a means of representing, or attempting to represent, imperceptible changes: movement is a “framework of a permutational unfolding” in and out of the frame (67). As Marey’s and Muybridge’s experiments indicate, as well as the long tradition of capturing animal death onscreen, cinema is just as much interested in arresting movement as it is facilitating it. In capturing movement, blocking it, or synthesizing it, cinema enables an intervention in this “permutational unfolding.” Animal images work with cinema’s ability to make such contingencies visible, further amplifying and confounding the meaning of the image.

The animal, then, brings to the fore cinema’s elemental affinity for contingency. Filmmaking, Sheehan observes, is “founded on the expulsion of chance, accident and error from the image” (121). But at the same time, it wants to assure its spectators “of an immense and unexpected field of action” (Benjamin 1968: 236). Though it revels in controlling movement, cinema is still lured by the “aleatory, stochastic, contingent”

(Doane 2002: 140-1). The animal, Sheehan contends, has been and still is one of the central vehicles for bringing this into appearance (121).

Animals put cinema on display, and its elements of contingency, dynamism, and movement. Cinema, in turn, put animals on display, but not just in live action but animation. Though animated animals can be read as metaphorical displacements of real animals, to draw animals nevertheless involves drawing attention to them. It takes time and a keen attentiveness to assess how to depict an animal figure in relation to its ground. As Sean Cubitt contends, there are two moves when we draw animals: when we draw ourselves into the animal, and when we draw the animal into ourselves (35).⁹ Animation may involve mastering or mimicking animal movement, but it emerges from an impulse to understand the way an animal comports itself in relation to its world. Contemplating how an elephant might sneeze while it is bathing in a pool of water in Walt Disney's *Dumbo* (1947) for example may seem insignificant, but it is still a means of imagining the elephant body as dynamically implicated in a world.

While a drawn animal may bear a certain onscreen potency, a live action animal exceeds it many times over. Animals onscreen, as Burt has suggested, offer a "rupture in the field of representation" (2002: 11). Whether they appear in fiction or non-fiction films, animals, because they do not "act" in the conventional sense, enjoy an alluring ambiguity of authenticity (Burt 2008: 10). All cinematic images do to a certain degree enact this tension between real and representation, figural and actual. But the live

⁹ Most animal animations are currently computer generated, and thus humans are no longer the sole artists of animals. The practice of digital compositing has presented all kinds of questions for cinema. One question that has yet to be explored is what it means that datasets and algorithms must now grapple with the animal and how it moves.

action animal image does even more so, as is evidenced by the ethical questions about animal welfare that are raised by the very presence of the animal onscreen.

The “No animals were harmed” disclaimer at the end of American films featuring animals certainly substantiates this ethical concern. As Bailly confesses, images of animals often lead to intense feelings that in turn, “give rise to a sort of embarrassment, rather as though one has inadvertently crossed a line and gotten mixed up in something untoward, or even obscene” (Bailly 4). Such intense feelings can explain, for example, how in the aftermath of *Free Willy* (Simon Wincer, 1993) audiences started out on a campaign to release Keiko, the orca whale who played Willy in the film.¹⁰ This excess of affect is why animals onscreen have had such a powerful effect on human-animal relations in modernity (Burt 2002: 196). As Burt argues, film’s visualization of animals played a pivotal role in how animals were treated and integrated (or not) into everyday life.

Animals are immanent to cinematic representation—not only entangled with its development, but also in how it wields and gives form its affective power. Because of this unique relationship, when animals appear in cinema they infuse the filmic image with greater intensity. They enact a Manichean juxtaposition within the frame, soliciting an awareness of dynamic relations and possible transformations, but also in the tension between on screen and off screen space. They dramatize and make manifest cinema’s own essential juxtaposition of reality and representation. This is what Serge Daney means when he claims, summarizing Bazin, that cinema is ultimately a story about animals (32).

¹⁰ See www.keiko.com

For Daney, Bazin's fundamental law of cinematic realism is that "whenever it is possible to enclose two heterogeneous objects in the same frame, editing is prohibited" (32).

Daney insists that Bazin's designation of "heterogeneous objects" is a euphemism for a "violent incompatibility" (33). The best example of this is the scene from *The Circus* (Charlie Chaplin, 1928) where Charlie Chaplin and the lion are positioned together in the same frame provides a good example of this. Or, his fixation on the juxtaposition of toreador and bull in his reading of *La course des taureaux* (Bullfight, Pierre Braunberger, 1951). However, these examples might be more broadly understood as an iteration of Bazin's fondness for juxtapositions more generally. Sometimes they became hostile, but it was not the violence he valued. Rather it was the radical co-existence of different entities, and cinema's ability to maintain that heterogeneity, and at some point depict the process whereby one being or force concedes to another.

Bazin disliked montage, for example, not wholeheartedly, but only when it compromised the disclosure that an encounter promises to offer. Editing harvests the scene before it can be fully cultivated. It cuts away the evidence of the essential negotiations between quintessentially different entities and their worlds, abandoning them on the editing room floor. Cinema's value—unlike theatre, which Bazin saw as a strictly human dramaturgy—dramatizes the world. Bazin's alignment of cinematic ontology with non-subjective worldly disclosure makes it possible to cast animals in leading roles, alongside or even without the human. Because "man in the world enjoys no a priori privilege over animals and things," he writes, the human should enjoy no such privilege in the film world (2005: 06). As such cinema provides the necessary dimensionality to the animal. It offers a point of view other than our own, a point of

view that could transform the image inside the frame at any moment, and even how we look at our own world outside the frame.

XII. Touching That Other Night: Where Optic Meets Haptic

In the opening passage of Bailly's *The Animal Side* he recounts in a beautiful passage (translated by Catherine Porter) an indelible encounter with a deer. The deer appears on the periphery of his car as he is driving home one evening. The passage makes a particular case for the potency of this meeting point of two worlds, where *umwelten* bear against one another:

The deer was in its night and I in mine, each of us alone. Still, in the interval of the chase, I am quite sure of what I touched: it was that other night, the deer's night coming to me, not given over but granted for an instant, that instant opening onto another world. A vision, nothing but a vision—the 'pure origin' of an animal from the underbrush—but clearer than any thought.... this is the truth, speaking of animals, from which I wanted to begin. (Bailly 2-3)

It is a provocative way to open his work. Bailly's account is textual, of course, but it is also in the vein of Derrida's game of looking with his cat, and Uexküll's screenic soap bubbles, anchored to a mobilized gaze that is expressly cinematic. As Anat Pick writes in her review of Bailly's work, "the mysterious night drive, the unknown man at the wheel, the frightened deer, the camera's sneaky advance up the road, the noirish cues are all here" (2013: 178). In this instance, the car becomes the proxy for the camera. The scene involves a disclosure of another world to the senses, through a partial, visual frame. Bailly's gaze lingers on the deer and its surround, seeing it in deep focus as it emerges, beyond human control, from the underbrush toward the car lights. That the encounter is framed in cinematic terms suggests once again that the modality of cinema is best suited for relaying the field of action of an encounter, particularly actions that materialize from

a non-human and non-rational causality, before consciousness and interpretation.

Significantly, Bailly surmises from his experience of seeing the deer from the vantage point of the moving car, that there is a power at the point of contact with animals, even if it is mediated (5). For all encounters with animals are always mediated, if not by the windshield of a car, then the anthropological machine of human thinking and seeing. Contact is not about crossing over into the other, but about acknowledging boundaries that cannot be surpassed. This contact, Bailly continues, is singular and consists of “scarcely formed, always nascent” touch (Bailly 5). Bailly’s emphasis on the visual and its transformation into touch, suggests the ways in which aesthetic contemplation can lead to ontological apprehension, from seeing to grasping.

Animal encounters are sensory encounters. In the visual field particularly they are about both seeing and touching. Seeing an animal is often accompanied by either a desire to touch it, or a desire not to be touched by it. But this tactility is not necessarily literal. As Bailly remarks,

it was as if with my eyes, in that instant, for the duration of that instant, I had touched some part of the animal world. Touched, yes, touched with my eyes, despite the impossibility. In no way had I entered that world; on the contrary, it was rather as if its strangeness had declared itself anew, as if I had actually been allowed for an instant to see something from which as a human being I shall be forever excluded. (2)

The encounter marks the overlap between the various *umwelten*: Bailly’s, the car’s, the deer’s. They are lured together in this particular moment, without ever knowing how or why. This coming together makes manifest the textured limits of their respective worlds, an intersection that feels more powerful than sight, that solicits a sensation that fleetingly feels like touch.

Looking can indeed evoke a sense of touch, through what Laura Marks has termed “haptic visuality” (162). Though Marks is discussing the longing for a sense of home that sensually intensifies the diaspora film experience, her description of haptic looking resonates with the experience of looking at animals too. Haptic looking, Marks continues, “tends to move over the surface of its object rather than to plunge into illusionistic depth... It is more inclined to move than to focus, more inclined to graze than to gaze” (162). If the cinema screen provides the image with a skin, then to look is to graze that skin, to lightly touch the surface without breaking it. Haptic looking does not seek identification, “so much as it encourages a bodily relationship between the viewer and the image...it tends less to isolate and focus upon objects than simply be co-present with them (164). In the end, haptic visuality affirms not only that an exchange of glances has taken place. It suggests that the onlookers have seen one another, acknowledged their solidity, their situated-ness in a world, and their potential for responses and resistances.

Even Bazin invoked this haptic dimension of visuality when he attempted to reconcile the represented world with the real world. He insisted that the screen object and the model “share a common being, after the fashion of a fingerprint” (Bazin 2005a: 15). This allusion to touch brings attention to the tangibility of the image, its susceptibility to, and its inextricability from a world. The reference to the fingerprint might initially seem to suggest that Bazin is claiming that an image is but a lesser trace of something more fully dimensional—in this case, a finger. But he goes on to say that ultimately “the photographic image is the object itself” (2005a: 14-15). This creates the possibility where the finger and the fingerprint share the same ontological status: one does not point toward the existence of the other. Rather they both equally exist—just at

different registers.

Berger and others have understood the animal image in the opposite way, as a poor substitute for the real thing. The visual field, Lippit insists, is full of these lifeless remainders, making modernity a “vast mausoleum of animal being” (187). Without any ontological weight to anchor them, these phantoms haunt the current literature. In order to exorcize them from visual culture we have to acknowledge these ghosts, and stop believing in them. We must open up our spaces for contact with real animals. As I have tried to show, this involves acknowledging the plenitude of the aesthetic animal by tending to the relationships that bind the finger to fingerprint, the animal to its image. Cinema’s non-human gaze provides a powerful lens to look awry, and catch sight of the great outdoors of human thinking.

Cinema creates a clearing for the animal event, an event which is primarily aesthetic, but not merely so. Bazin insisted that cinema at its best brings together heterogeneous elements, and in their aesthetic tension, something new is created. Such cinematic realism is reminiscent of what Rancière elsewhere calls the “heterogeneous sensible,” the revolutionary power of aesthetic interventions that incite tensions between the representable and the unrepresentable (2002: 142). These interventions jostle human perception and reorganize the field of sensibility. Cinema transforms aesthetic animals into haptic images, invests them with a “third meaning,” an excess of significance that means they become real. When animals are real, they can surprise us and offer opportunities to see the familiar, anew.

XIII. Primal Scenes and Funny Feelings: Toward an “Aesthetics of Livingness”

The case studies that follow are unexpected occasions to bear witness to the surprising propinquity of animals and technology. The scenarios on which they are based—an octopus absconding a camera and making a movie, a non-human ape playing a video game on an iPad, and a carrier pigeon racing against the Internet to meet a computer—enact Bazinian juxtapositions. That is, they manifest the radical co-existence and relationships between heterogeneous things: animals and technology, the organic and inorganic, nature and culture, and reality and representation. They are unsettling but transformative realist interventions.

In this way, they are not unlike “primal scenes.” Sigmund Freud identified the primal scene as that crucial moment, real or imagined, when a child witnesses for the first time her parents in the throes of sexual activity. In psychoanalysis, this scene plays a key function in human becoming. This happening is traumatic for the human subject, not simply because it is confusing and misunderstood as violent, but because it generates an uncomfortable feeling of exclusion. The child has, up until this point, always thought she was at the centre of every relationship. Now, not only must she accept her new station, she must confront unexpected relationships among familiar things that, in her limited understanding, she cannot explain. She must acknowledge and come to terms with this previously hidden relationship that has suddenly become manifest. Her confusion, in turn, encourages her to recalibrate her worldview.

These animal-media primal scenes operate in a similar fashion. By including only animals and technological media, they exclude the human and encourage us to endure, for a moment, what it feels like to be peripheral. They prompt us to realize that we are

not always at the focus of every relationship. This exclusion creates a space for the disclosure of something real: that is, previously concealed relationships, and the limits of our own knowledge and experience. In this space, it becomes possible to acknowledge the desire, the comportment, and the being of others.

The case studies generate funny feelings in another significant way as well. They may function as unsettling primal scenes, but they are just as much scenes from situational or screwball comedies with their non-verbal jests of slapstick. This comical syntax is purposeful, and serves several functions here. First, many of these encounters actually are transpiring in the comic mode. The fact that each case study's establishing scenario sounds like it might be the set up for a joke is no accident. Two out of three of them have actually provided the basis for April Fools' Day pranks. This humorous dimension is a meaningful sign that they are disclosing existing boundaries and playing with them.

The Internet is rife with such amusingly absurd juxtapositions, trading in the visual pleasure of animals interacting with cultural artifacts. From cockatiels dancing to the sounds of the Backstreet Boys, dogs wrestling with vacuum cleaners or riding skateboards, cats attacking printers, running on treadmills, or making music on pianos, to rabbits coasting on roombas, bears jumping on trampolines, foxes fixing themselves a sandwich, frogs playing video games, goats taking the bus, and monkeys washing dishes, virtual spaces are currently teeming with a seemingly endless parade of creaturely curiosities.

While it is tempting to characterize these animals online as "cute," in their attempts to maneuver and negotiate with objects to which they do not fully understand, I read these interactions as actively "zany," in Seanne Ngai's sense of the term. While

cute, Ngai notes, is an aesthetic category that can generate tenderness and affection, it also tends to eroticize powerlessness, and fetishize consumption (1, 3). Not only that, identifying something as “cute” runs the risk of diminishing even the observer: thanks to the infectious charm of the cute, we often take on infantile language when we talk about cute phenomena (Ngai 3; 8).¹¹ Charming but ultimately irrelevant, cuteness can be construed as degrading rather than enriching public life. This is certainly how “cute” animal content is framed in popular culture.¹² Images, videos, and animated gifs of such animals are excluded from serious inquiry, often considered guilty pleasures, passive consumables, tools for procrastination and avoiding more economically valuable activities like work.

Highlighting the slapstick choreography of animals, improvised at the sites of encounter, provides a way toward thinking animals as zany. Zany is, for Ngai, another minor aesthetic category: one of mimetic action that sensuously and affectively reflects the performance-driven conditions of late capitalism (Ngai 1; 8). Zany is a form of expression that belongs to the comic mode, and is best embodied by slapstick comedy. As Ngai points out, “the zany” comes from *Zanni*, a stock character from *commedia dell arte* (literally “the comedy of art”), the cultural precursor to slapstick. It encapsulates “a strenuous relation to playing that seems to be on a deeper level about work” (Ngai 7).

¹¹ This certainly appears to be the case with Harman, as he describes “a sweet little donkey” with its “sweet little mouth and tongue” (142). However, it is even more pronounced in the development and popularity of “LOLspeak” or “kitty pidgin,” which refers to the slang that playfully mimics how cats might speak in English if they could. That is, similar to baby talk, with ample spelling mistakes and grammatical errors (Gawne and Vaugan 2011).

¹² New research by Jessica Gall Myrick at Indiana University Bloomington, however, suggests that watching online content such as cat videos can actually boost energy levels and increase positive feelings, indirectly stimulating human motivation to complete tasks (“Not-so-guilty Pleasure” 2015).

However, with regards to animals, the zany becomes less about work and the modern human experience, and more about the multi-species performative and affective experiences of technological modernity. Many scholars have, after all, noted slapstick's special relationship with industrialization. It enjoyed renewed popularity during the machine age. Slapstick was a boon for silent film comedies, and technologies were a wellspring for slapstick: reflexive sites to explore the strange affects and operational logics of machines. Technology gave slapstick a whole new set of workable routines. It may be a comedy of planned and repetitive gags, but it is also a comedy about the comic, contingent, confounding experiences of modernity. Experiences that often involve peculiar juxtapositions.

In fact, meandering through the current visual field, one can easily be amused in much the same way that Foucault admits he was while perusing Borges' fictitious animal encyclopedia. For him, the laughter generated from strange taxonomies and surprising juxtapositions jostled "all the ordered surfaces and all the planes with which we are accustomed to tame the wild profusion of existing things," as he writes in *The Order of Things* (xvii). This disturbance threatens the very architecture that supports what he calls, "the age-old distinction between the Same and the Other" (xvii). Laughter, by breaching boundaries, also illuminates them, disclosing the existence of much more serious, deeply entrenched systems of organization. In this case, what appears is a system of classification that makes opposites out of nature and culture. These ontological and epistemological categories, Foucault ultimately argues, create the conditions that frame and put limits on how we sense, perceive, and understand the world.

Laughter, as Immanuel Kant describes it, is a phenomenon that arises from the moment when “the bubble of our expectation was extended to the full and suddenly went off into nothing” (161). Kant’s bubble analogy resonates effectively with Uexküll’s, suggesting that the site where *umwelten* meet, where two spheres of significance press against one another, can generate substantial friction. It also suggests that the contact zone between animals and media and their particular *umwelten* often announces itself through the visual pleasure of the comic. This friction can generate amusement; but it can also compromise the membrane of our expectations in productive ways. Though Uexküll insists the tension produced by two adjacent *umwelten* is not powerful enough to burst respective bubbles, when they jostle against each other they can disclose partial sights that can lead to significant insights.

Second, this comic mode provides a way to restore what Jonathan Burt calls, “the aesthetics of livingness” to animal imagery (2006). These lively, comic aesthetics encourage us to think not just about what the animal is, but also about what it does. It is a way to acknowledge animals in animal imagery as part of a larger network of worldly relations, wherein they actively explore, resist, play with, negotiate, or surrender to stimuli in their environments. It is a tactic to account for the ontological plenitude of the animal in the visual field, give it the opportunity to communicate, to be open to encounter, to engage with, transform, and become with its environment, and most importantly, to make meaning. It is a way of filling out the animal so that it can affect, and participate in the production of knowledge.

Third, approaching animal imagery in the comic mode also presents an opportunity to counteract the decidedly tragic mode that, as I have outlined above, dominates discussions of animals in modernity. Animals are reduced to insubstantial

specters and vehicles for melancholy, best expressed in Lippit's insistence on technologies as "virtual shelters for displaced animals" and visual culture as "a vast mausoleum for animal being" (187). Thinking about the visual field as brimming with lively and ludic animals provides a vital counterpoint to the stubborn hold of these more funereal figurations. More than a mausoleum for animal being, a digital menagerie, a bestiary, or a *tableau vivant*, the Internet is alive with real animals. This fact becomes clear when we tend to how animals find their way into digital spaces, rather than why humans are compelled to put them there.¹³

This idea of animals haunting the aesthetic landscape of modernity is poetic, poignant, and pervasive, but in the end, it only serves to ontologically diminish animals. It furthers their cultural annexation by denying their reciprocal entanglement in their environments, and their activities in and around the production of their imagery. It ignores the fact that representation is an active process. The insistence that animal imagery is completely separate from real animals is not only an issue of not

¹³ Take, for example, the peculiar and persistent phenomenon of cats on the Internet. By now, it is an undisputed truism that cats dominate web content. Regardless of its veracity, it is treated as a *fait accompli*. The recent exhibit at The Museum of the Moving Image in New York though titled "How Cats Took Over the Internet" is actually more interested in why humans like cats, and what they like to do with their images (2015). This interpretation ignores the larger material reality of the offline world, particularly that of the domestic realm, which is frequently collocated by both cats and the Internet.

Missing from the cultural conversation is the possible correlation between cats literally sitting on laptops and cats appearing on websites. Because they dwell in human homes, cats are never far from the Internet; they tarry in the physical spaces where Internet activity takes place. They step on keyboards, rub their faces on screens, attack printers, and chew on Ethernet and power cables while their errant fur clogs up computer vents. That the computer, its peripherals, and supports, as well as the immediate space around them require "cat-proofing," suggests that felines are at least partly—even if indirectly—responsible for their own presence online (see for example cat-proof software, *Pawsense* <http://www.bitboost.com/pawsense/> or "CATable" a desk designed by Lyc's Architecture to be used as a human workstation and play/resting station for cats <http://lycs-arc.com/archives/3759>

To a certain extent, humans are involved in putting these animals online, but animals whether directly or indirectly, leave these traces behind online, and we can, in turn, make meaning from them. Whether they appear in images or videos, or macros, memes, animated gifs, or are merely alluded to in personal anecdotes on blogs, or social media, or in strange, offbeat news items in the margins of popular media, these are animal artifacts, digital traces left by actual animals. This project identifies them, addresses their ontological validity, and uses them as starting points to track animal-media encounters through culture.

acknowledging the animal participation in image making. The insistence on associating animal appearances with death, as Burt argues throughout his work, also stems from a larger suspicion about aesthetics more generally and an insistence on language as a measure of difference. Lacking language, animals become meaningless in and of themselves: they are symbols of lack, empty containers for human meanings. This leads to a fundamental privileging of the ideal and the abstract over the real and the concrete. This is a deeply entrenched fault into which the non-human often vanishes.

This non-aesthetic, textual-linguistic approach to the animal favours a generalized idea of the animal as a symbol of nature over the real, singular, living, breathing being that actually appears. As a result, this non-aesthetic approach reinforces human idealism, making it possible to believe that nature has to be sacrificed so we can become human and modern. Challenging this moroseness is not meant to deny the existence or significance of more destructive or oppositional encounters between animals and technology or be cavalier about animal suffering at the hands of humans and technology. However, the over-emphasis on animal victimization and sacrifice only diminishes animals further by reducing them to undifferentiated passive object matter for human mastery and treachery. The upcoming case studies attempt to look at animals, cinematically, in full acknowledgement of the relationship between their aesthetic appearance and their ontology. The hope is to follow these animals as they wander in the visual field, so that when they happen upon technology, we can have a better grasp of what exactly transpires as two textured worlds touch, and concede to their mutual presence.

Chapter 2

An Octopus Steals a Camera and Makes a Movie: Revisiting Cinema's Non-Anthropocentric Ontology

nature at last does more than imitate art: she imitates the artist.

–André Bazin, from “The Ontology of the
Photographic Image,” in *What is Cinema? Vol. 1*
(2005: 15).

film springs forth from the world to which it ultimately returns.

–Anat Pick, from “Three Worlds: Dwelling and
Worldhood on Screen,” in *Screening Nature: Cinema
Beyond the Human* (2013: 21).

the accidental is absolutely just as necessary as the necessary.

–Søren Kierkegaard, from *Either/Or* (1:234).

I. Octopus, Meet Camera

In the spring of 2010, somewhere near the ocean floor off the coast of Wellington, New Zealand, a Giant Pacific octopus stole Victor Huang's digital camera, and accidentally made a movie. Huang, an amateur free diver, had been on a leisurely afternoon dive when he spotted the octopus nestled in a nearby bed of seaweed. Enlivened by this rare sighting, he reached for the camera—just as the octopus reached for it too. After a brief struggle, the animal managed to wrestle the device out of Huang's clutches, and quickly fled the scene.

Huang followed in hot pursuit until he caught up with the intrepid cephalopod. Then, using his spear gun for leverage, he pried the camera free from the octopus's suctioned grip. Unharmed, it lost interest and eventually retreated to the turbid water below. Fortuitously, the camera remained engaged throughout the entire ordeal. Of course, none of the details of the event are discernible in the resulting footage which is all strange angles, disorienting movements, and blurred images. Huang uploaded it

anyway and shared it on YouTube, but for the sake of narrative coherence, he inserted descriptive subtitles, added a dramatic musical score, and gave the final form the perfunctory title: “octopus steals my video camera and swims off with it (while it’s Recording)” (Victor’s Videos 15 Apr. 2010).¹⁴ These attempts to tame the wildness of the images and render them intelligible only serve to emphasize their unruly character.

Admittedly, the circumstances that contributed to the video are farcical. On their own, they may add up to a little more than an amusing anecdote. Yet, despite its outward absurdity and seeming singularity, the constellation of events at the crux of “octopus steals my video camera” is by no means rare. In fact, YouTube is teeming with similar videos, borne of animals encountering cameras and pilfering them in mid-record. Aside from octopuses, other known camera thieves-turned-filmmakers include gulls, macaque monkeys, dogs, manta rays, sharks, lions, crabs, eagles, striated caracaras, and squirrels.¹⁵ The videos that constitute this creaturely catalogue have their particulars, but they are all nonetheless made under comparable conditions and manifest distinctive similarities in form, style, and subject matter. Cumulatively, they make enough coherence to suggest a nascent genre, one I provisionally call “accidental animal videos”: that is, accidental films wherein animals are significantly implicated in their making.

¹⁴ <https://www.youtube.com/watch?v=x5DyBkYKqnM>

¹⁵ See for example: “Seagull Stole Go Pro” (Lukas Karasek: 23 June 2011), “Monkey Steals GoPro Hero 3+” (Mochilao TV : 22 Jan. 2014), “dog steals camera” (djfc11: 20 Dec. 2009), “Book ‘em Danno: Klepto Manta Mugs Cameraman” (Into the Drink: 9 Sept. 2010), “Great White Shark attacks GoPro underwater robotic camera” (bodhispeak: 7 Aug. 2014), “Lions Pinch Camera” (Roger de la Harpe: 23 May 2011), “Crab Steals Go Pro” (Diederick Ryan: 23 Oct. 2013), “eagle steals camera from crocodile trap” (The Telegraph: 2 Dec. 2013), “Amazing! Bird Steals Egg Camera and Films Penguin Colony” (JohnDownerProd: 17 Jan. 2014), and “A squirrel nabbed my GoPro and carried it up a tree (and then dropped it)” (VivaFrei: 7 Nov. 2014).

In her work on new documentary, Stella Bruzzi identifies accidental films as amateur works that lack premeditation, intention, authorship, editing, and narrative that become significant when they capture something “by accident rather than design” (18). They are typically of very poor quality. And yet because of their peculiar purchase on real events, their indeterminacy only increases their exegetical allure. However, for all their epistemic appeal, accidental films fail to reveal what they promise to depict. Much like the Zapruder footage of the JFK assassination—which Bruzzi identifies as exemplary of this cinematic form—their value is located less in the factual details they provide and more in the way they disclose something of reality and the perimeters of its representability.

These videos hardly offer much detail; the camera is too deeply implicated in the unfolding events to offer clear views of them. These do not show animal-camera encounters so much as they serve as evidence that they took place at all. This encourages us to acknowledge that these encounters are not entirely unprovoked. They can suggest to us something about the reality in which they were made, namely the increasingly ubiquitous presence of cameras in the perceptual thresholds of non-human animals in their everyday lives.

Rather than simply documenting animal-camera encounters, then, they also document another encounter: one between a fugitive, more-than-human reality and the camera’s mechanical insistence on turning that reality into intelligible images. In short these little videos end up documenting the process of cinematic representation itself. Instead of representational failures, they are reality’s accomplishments. They affirm the richness of reality, and at the same time, cinema’s ability to suggest something of that richness. These representational underachievers achieve something quite beautiful and

rare: cinematic realism—in a truly Bazinian sense. As much as animal-camera encounters are interesting in and of themselves, rendered in audio-visual form they become even more intriguing. For not only do they take place, they also create a place for non-anthropocentric contemplation and speculation. They make a clearing in the human *umwelt* to consider in earnest what happens at the limits of human perception, and the edges of representation.

Accidental animal videos may be droll diversions, but this chapter takes them seriously as opportunities to genuinely explore reality at the limits of the human. The chapter builds a case for accidental animal videos as instances of cinematic realism, as outlined by André Bazin. Identifying them as realist is not merely an exercise in aesthetic appreciation or formal categorization. As Bazin insists, realism is valuable only insofar as it can bring increased meaning and significance to what is created (1973: 85). Discussions of a film's realism inevitably delve into deeper questions about the nature of reality, and cinema's capacity to provide access to, or at least gesture toward, that reality. Identifying accidental animal videos as realist is a maneuver to put them to work, to get at the reality in which they are made, and learn more about the medium that makes them possible

For Bazin, tending to a film's style is merely an alibi to segue into grander discussions of the nature of reality on the one hand, and the nature of cinema and its relationship to that reality, on the other. Cinematic realism is mobilized here as a method by which to evaluate what these videos can offer to our understanding and appreciation of the world, beyond our familiar experience of it. Cinematic realism cannot be defined absolutely; for Bazin, it becomes clear only in context. As Daniel Morgan argues, Bazin's realism "entails a closer examination of how a film's style counts

as an acknowledgement of the reality conveyed through its photographic base” (471).

Realism is therefore a method for elucidating how a particular film establishes, through its aesthetics, a relationship to the world.

It is a mobile method that moves laterally between aesthetics and ontology, between representation and reality, while never sacrificing the latter for the former. That is, it productively draws attention to the conflicts between the aesthetics of animal imagery and the material reality of its production. These conflicts, I argue, temper our sense of entitlement to access the world, and encourage us to welcome instead what is offered. In this way, accidental animal videos are significant rejoinders to the anti-realist tradition of wildlife imagery. They constitute flashes of actual wild life, moments where nature and culture play while flummoxed humans helplessly stare on.

Accidental films are highly cathectic sites for a variety of reasons, not the least of which is because they are unexpected tangents, deviating substantially from whatever the insipient human motivations were—if any—for starting the camera to begin with. As indelible depictions of the unexpected, it is unsurprising that accidental animal videos often achieve viral status on the web. “octopus steals my video camera” for example has, since its initial upload, garnered over 6 million views on YouTube and even made its way to television, where it was showcased on the *Animal Planet* series, “Weird, True and Freaky” (2010).

Its popularity alone does not substantiate its significance, but considered alongside the user comments about the video, it does suggest something of the visual pleasure that an octopus’s directorial debut can incite. Over on the social networking site *Metafilter* (“Eight Arms to Film You”), one user described the video as “a Dogme 95 version of a buddy film” (maudlin). Another quipped that the octopus must have

“realized the limits of the new media, and decided to stick to ink” (kuujjuarapikm). Meanwhile someone else remarked that the “octopus was clearly influenced by Stan Brakhage and Jean Painléve” (drab_parts).

These irreverent and anthropomorphizing discussions, in conjunction with the video’s viral status, constitute a kind of cinephilic appreciation. Cinephilia, as Mary Ann Doane writes, may name a love of cinema writ large, but it is also an affection for the desultory detail, “the uncontrollable aspect of cinematic representation, its material predilection for the accidental, the contingent” (2002: 226). These moments, she continues, can show us where cinematic conventions tremble and threaten to collapse, and a furnish fleeting glimpses of what exceeds representation (Doane 2002: 227). What matters is not what the cinephilic pleasure means, but that it is present. Cinephilia indicates the appearance of something that cannot be systematized or assimilated into representation—something real.

Finally, these videos are the productive outcomes of the camera’s explicit slippage from human control. They are instances where the non-human is the aesthetic catalyst for representation. As such they provide occasion to reflect on cinema’s potential as a non-anthropocentric medium. For Bazin, what makes cinema’s essential realism possible are exactly these non-human interventions. Intrusions from non-human forces—whether avalanches or whale sharks, or in this case octopuses—foreground, amplify, and support what the camera itself is already doing: intervening as a third-party between humans and their environment, to conjure images of the world in unexpected ways, that “our eyes alone could not have taught us to love” (Bazin 2005a: 16).

At the same time, as instances where nature literally becomes the artist, these

little dramaturgies of Nature offer an additionally generative counterpoint to the anthropocentrism specifically at work in traditional wildlife imagery. By disclosing the seams of wildlife imagery, they offer glimmers of the material reality of its making-- which is traditionally obscured in the service of maintaining the nature-culture, animal-human divide. These sudden, unanticipated interruptions simultaneously illuminate the mutual entanglement of animals and cameras, nature and culture, reality and representation. They bring into question the genre's conventions and the validity of voyeuristic humans freely gazing at seemingly indifferent animals as though they were inhabitants of an untouched nature over there. Nature does not only not conform to how we want to see it—as a fantasy space, an Eden we left behind and hope one day to return—but it actively and delightfully rebels against our stubborn insistence on such conceptual partitioning.

II. Dialectical Frictions: Animals/Cameras, Reality/Representation, and Nature/Culture

Accidental animal videos set out in the direction of conventional wildlife imagery. They unfold under the human pretense of capturing and producing images of animals and landscapes as Nature, at the same time, from a privileged position outside of Nature. As such, they carry an anti-realist logic of representation. That is, one that reflects and reinforces, at a conceptual and aesthetic level, the idealistic separation of Nature from Culture, animal from human, and reality from representation. This partitioning is a uniquely human project, a project about which this particular New Zealand octopus could care less.

Thanks to the interventions of such capricious animals, these human efforts to

systematize the world end up going significantly, comically awry. What emerges is the kind of ancillary footage that might otherwise appear on a blooper reel of an actual wildlife documentary. They offer views of what is typically obscured in wildlife imagery: the material reality of its production. This newly roused attention catalyzes a reorientation toward the real, where nature and culture collaborate and play—despite the modern human insistence otherwise.

Furthermore, with their rough-and-tumble aesthetic, these videos are more confounding than clarifying. The blurry, jostling footage, all strange angles and warped perspectives, offers little in the way of informational detail. Rather than undermine their communicative power, these imperfections contribute to it. In failing to reproduce a world that conforms to the manner in which humans desire to see it, accidental animal videos generate instead a series of “discorrelated images.” That is, what Shane Denson refers to as images that do not correspond to the human perceptual system and trouble the correlation between human being and knowing (2016). In this way, accidental animal videos acknowledge that reality exceeds our grasp of it; they hint at the excess of reality that extends beyond the frame of human subjectivity.

Thanks to these discorrelated images, accidental animal videos figure exactly as the kind “mis-fit” moments between reality and representation to which Bazin was drawn. As Ivone Margulies notes, Bazin often tended to scenes that featured “the radical breach between the transience of existence and mechanical reproduction” (2003: 5). This was more than a personal affectation. Bazin cherished these moments because they showcase “the dialectic between reality and abstraction, between the concrete and the ideal” (1973: 84).

Cinema’s disposition to capture and transform reality and reality’s stubborn

resistance to be captured, together incite a creative dialectic for Bazin, one that serves a dual function. As Anat Pick and Guinevere Narraway remark in their introduction to *Screening Nature: Cinema Beyond the Human*, this dialectic both reveals and affirms “the reality of the world and the realism of the medium” (2). The tumultuous negotiation between the systematicity of cinematic representation and the intractability of reality, affirmed for Bazin, the materiality shared by both reality and representation. Emphasizing this essential link is not only a way to elevate and clarify the significance of cinematic forms, it is equally a means of extending our understanding of reality more generally.

Accidental animal videos offer an additional, and equally appealing, mis-fit: that between nature and culture. They disclose the shared materiality between these two conceptually separate realms. As such they are exactly the kind of nature-culture hybrids that Bruno Latour claims are produced as a result of the continued insistence on the separation of nature and culture. In *We Have Never Been Modern*, he argues that the more we try to keep these worlds apart, the more they will come together in unseemly hybrid forms (10-11). That nature and culture are still persistently imagined as distinct ontological zones despite their continued mixing is, for Latour, a testament to the stubbornness of the modern critical stance.

In order to get past this kind of thinking, it is necessary to direct our attention to the work of hybridization, and take stock of the processes of purification that make them possible. In the words of Timothy Morton, it is necessary to think “the ecological thought.” That is, to think ecologically about the world, without the restrictive conceptual frameworks of nature and culture. “The ecological view,” he writes, is “a vast, sprawling mesh of interconnections without a definite center or edge. It is radical

intimacy, coexistence with other beings, sentient and otherwise” (2010: 8). It is, then, an active opening up of human thinking that makes it possible to encounter new and unanticipated phenomena.

The distillation of nature and culture into two distinct and oppositional categories is perpetually carried out in the domain of wild animal imagery in what Matthew Brower calls “the discursive regime of wildlife photography” (xvii). This imagery produces nature as a disinterested, immutable, and eternal realm outside the space of culture and the time of history. As such, it provides the ground onto which the nature-culture divide is drawn and validated. In order to get beyond this conceptual trap, Brower contends, wildlife imagery needs to be denaturalized (xviii). Images of nature, thanks to the techniques and rhetoric of wildlife imagery, appear direct and unaffected. They tend to obscure human presence and signs of mediation: any and all indicators that the images are in fact historically and culturally situated and technically contrived.

As a countermeasure, Brower advises that we acknowledge that these ostensibly objective and natural images have a style. In order to appreciate this imagery as the outcome of more complex, interrelated processes between humans, animals, and cameras, we must identify and make manifest the latent technical and cultural techniques in the images themselves. This is Brower’s own tactic in *Developing Animals*, where he uses the aesthetics of animal imagery to illuminate the physical relationships between filmmakers, cameras, and animals and their situation within larger historical and discursive matrices. The question for Brower is not what wildlife photography is or why it exists, but what it does: what it does to our understanding of the world, of non-human animals and our relationship to them, as well as our

understanding of the photographic medium. Though he never explicitly cites him, this is a particularly Bazinian approach.

III. What Cinema Does

Bazin was likewise less interested in defining what cinema is, and much more interested in exploring what it does: how it operates and what it fails or manages to achieve. Despite the fact that much of his criticism was published under the multi-volume work, *What is Cinema?* Bazin never explicitly answers this question. Whatever cinema is, it emerges in action during the momentary concrescence of filmmaker, camera, and world. Because accidental animal videos do not involve a human filmmaker, it is tempting to conclude that they must therefore be un-cinematic. However, it is important to note that in this triad of filmmaker, camera, and world, Bazin prioritized the relationship between camera and world over the role of the filmmaker, which was tertiary at best. “All the arts are based on the presence of man,” he writes, “only photography derives an advantage from his absence” (2005a: 13).

What separates cinema from all other media is that it grants the world a unique capacity to produce images automatically, a process to which the human is only peripherally aware. The human filmmaker is not essential to the image, she may decide how and what to record, but she is merely a facilitator, reality’s faithful steward. For cinema is fundamentally a realist medium: it offers “a recreation of the world in its own image” (2005a: 21). With cinema, Bazin writes, “nature at last does more than imitate art: she imitates the artist” (2005A: 15). The world, not the human director, is the creator of the work. This is what ultimately distinguishes cinema from theatre. Theatre, Bazin maintains, is a distinctly human dramaturgy: it positions the human as “its cause

and its subject” (2005a: 106). Cinema by contrast is a “dramaturgy of Nature” (Bazin 2005a: 110). In deferring the human, cinema allows the world to become not only the leading character, but also the very aesthetic catalyst for representation.

Accidental animal videos marginalize the role of the filmmaker even further. In commandeering cameras, animals not only resist totalizing human figuration, they become active producers of images. It is true that all animals participate to some degree in the production of their likeness, as well as their material and semiotic effects (Burt 2002: 32). However, in accidental animal videos, this animal participation becomes especially pronounced. Animals are not just dynamic actors within the *mise-en-scène*, they are also more accurately *metteurs-en-scène*. They are directly intervening in the process of filmmaking, controlling the camera’s position, movement, and framing. In this way, animal videos come to constitute dramaturgies of nature: animals make the world in their own image. These videos are literal manifestations of what Bazin had only ever meant metaphorically to articulate the non-human essence of cinema’s realism.

As much as accidental animal videos are beholden to chance, their consistencies in form suggest that they nevertheless rely on certain material preconditions. While they appear accidental to us, in reality, they are not so random. There is a reciprocal attraction between animals and cameras in the new media environment, catalyzed by the increasing mobility, ubiquity, and functionality of digital cameras. These videos are also borne of cinema’s own perennial penchant for ontological realism. As much as they are nascent forms, they revisit and renew attention toward cinema’s fundamental relationship to contingency and materiality. This relationship is primarily an achievement of the camera’s automaticity. While the human may engage the camera,

what happens once it begins the process of recording moves beyond the bounds of her control.

“Every new development added to the cinema must take it nearer and nearer to its origins,” Bazin proclaims in “The Myth of Total Cinema” (21). While technological developments do bring into being new techniques and forms for cinema, these iterations still operate recursively. That is, they conjure into the present, moments of contingency and otherness that transform and recalibrate human experience. However, cinema appears, through its elementary link to materiality, it is able to give substance to a world that would otherwise escape our attention. Cinema’s ability to do this is an accomplishment of its automaticity and its non-human remove. Only in the moment of slippage from human control does the world appear in ways that we would never have thought to imagine it. This is how cinema makes possible new opportunities to engage with unfamiliar vistas of existence.

IV. Bazinian Realism: A Clarification

Realism, Bazin readily admits, is not easily defined; it is not a set of criteria that can be applied to a given film. Rather, realism is inherent to cinema; it comes from within. A realist style, he writes, is one that can be understood as an “inner dynamic...somewhat like the relation of energy to matter or the specific physics of the work” (2005b: 31). This does not mean that all films are ultimately realist, merely that they all bear an embryonic realism that can, given the proper conditions, flourish. Cinema’s native logic is, Bazin contends, centrifugal: it moves away from the frame. Painting, by contrast is centripetal: it contains a world inside a frame which polarizes space, and our attention, inwards. The cinema screen, meanwhile, mobilizes attention

away from itself, toward the world (2005a: 166). Realism is this fundamental movement toward the real. And that movement, Bazin insists, “can take a thousand different routes” (1973: 85).

Though Bazin’s realism is often associated with the naturalistic style of Italian Neorealism and the French New Wave, it is not limited to these. While he admired their use of the long take, deep focus, and non-professional actors, he was less interested in the techniques themselves than he was in the attitudes that motivated them. What mattered was that these directors did not make “reality the servant of some *à priori* point of view” (2005b: 64). He lauds Jean Renoir for example, for “the attention he pays to the importance of individual things in relation to one another. He does not sacrifice the tree to the forest” (1973: 84). Realism is, thus, an ethical commitment to the singular and the particular over the conventional and the general.

As such, Bazin not only identified realism in European art cinema, he found it in exploration documentaries, surrealist films, science films, and even slapstick comedies. He was incredibly generous in his readings of even the most artless films, which James Tweedie takes as a sign of his “appalling and intriguing bad taste” (277). Bazin had no problem plumbing the depths of popular culture in order to locate and retrieve valuable instances of cinematic realism that could illuminate “the reality of the world and the realism of the medium” (Pick and Narraway 2).

He approached each work as a half-formed communicative gesture; it was the task of the critic to continue this communicative work, to expand the meaning at which the film is only able to hint. Realism, then, can manifest in any number of ways, but it never takes for granted that reality is fully available to representation. This respect for the real is integral to the operation of cinema’s native logic. Cinema is, first and

foremost, a medium that makes worlds. However, it is also part of and caught up in the world, which means the vistas it offers are never total or infinite. Cinematic representation may offer images of people, animals, places, and things within wider ecologies, eclectic and interrelated fields of action and potential action, but these glimpses are always situated and therefore partial.

Cinema does not just create worlds, but believable worlds that rival the ontological authority of our own world. “At the source of all realism,” Bazin says, there is an aesthetic paradox that must be resolved (2005b: 64). This not simply the paradox of the concrete and the abstract, of authenticity and artifice, but of the concurrent existence of two unique universes: the profilmic reality, and reality itself. Two solid worlds cannot occupy the same place at the same time. As Bazin affirms, “the world of the screen and our world cannot be juxtaposed...the very concept of universe is spatially exclusive” (2005a: 109). One universe must necessarily yield to the other: at some point we must give ourselves over to the filmed world, allow it to become the Universe, if only for the duration of the film (2005a: 109).

It is this transfer that makes it possible for the spectator to enter into a genuine relationship with it, catalyzing reactions, relations, and transformations. In order for this transfer to take place, however, the world onscreen must have the necessary ontological authority that realism provides. The cinema frame is only ever partial; realism suggests that the world onscreen is grander and more complex than it appears, that it is “part of something prolonged indefinitely into the universe” (2005a: 166). Realism is, then, fundamental to the creation of a sense of worldliness that exceeds the apparatus’ ability to represent it.

Thus, if cinema creates a world in tandem with our own, then realism grants that world the necessary integrity so that we may, for a time, believe in it. It makes it possible to shift between reality and representation, and forge meaningful relationships with worlds onscreen, and off. For at stake in realism is the powerful communicative capacity of cinematic images. Realism makes possible their ability to affect us “like a phenomenon in nature, like a flower or a snowflake” (Bazin 2005a: 13). While it is tempting to associate this realism with photographic indexicality, the relationship between object and image is not strictly indexical. Bazin explains that cinema creates an ontological equivalence between images and objects—but is it not a question of verisimilitude. As he explains in “The Ontology of the Photographic Image”:

the photographic image is the object itself, the object freed from the conditions of time and space that govern it. No matter how fuzzy, distorted, or discolored, no matter how lacking in documentary value the image may be, it shares, by virtue of the very process of its becoming, the being of the model of which it is the reproduction; it *is* the model. (2005a: 14)

The image does not refer to the model: it is the model. As nebulous as this passage is, Bazin seems to suggest that cinematic images are more than signs that communicate absent presence. The reproduction becomes indistinguishable from the model “by virtue of the very process of becoming,” he writes. That is to say, the image becomes the model thanks to the material processes by which an object becomes a representation.

However, cinema does not simply reproduce objects: it also animates them *in situ*. They are reproduced within their environments openly interacting with and responding to other objects, textures, and forces. Cinematic rendering is ecological: it produces ecologies while also being produced by them. The way cinema tends to objects and their relations makes it so that a filmed event can be just as potent, if not more so,

than the actual event on which it is based. The fatal encounter between a bull and a bullfighter in *The Bullfight*, Bazin claims, is “as moving as the spectacle of the real instant that it reproduces” (2003: 31). “In a certain sense,” he continues, “it is even more moving because it magnifies the quality of the original moment through the contrast of its repetition” (2003: 31). This encounter between bull, human, and camera is not powerful because it refers to an event that really happened. It is potent because the film retains the integral urgency of this vexed relationship, allows the spectator to hold it uncomfortably in her regard, and attempt to reintegrate it into new panoramas of meaning.

In sum, realism is essential to cinema. It is integral to creating structurally sound worlds that feel multi-dimensional so that we can explore new avenues of being and knowing. Realism is also a process, one that works toward what Bazin calls, “true realism”: giving significant expression to the world “both concretely and its essence” (Bazin 2005a: 12). The possibility of achieving true realism provides the motivation for all cinematic representation. But true realism always remains at the level of aspiration; it is part of what Bazin called “the myth of total cinema,” an ideal that must never be achieved. Such an achievement would reduce reality by claiming it can be contained fully in representation.

While realism is essential to cinema, the camera’s automaticity is in turn essential to that realism. Bazin presumes the camera’s non-human remove is open to the communicability of the world in ways that the human subject is not. As such, realism requires the surrender of the human to the disinterested automaticity of the camera, in deference to the world. When humans are too tightly lodged in the processes of representation, they undermine cinema’s native operational logic of realism. This is

especially evinced in Bazin's oft-cited criticism of montage. An overreliance on editing, he felt, works against cinema's tendency to make worlds and establish a spatial-temporal unity between humans, animals, things and the surrounding world (Bazin 2005a: 52). Montage becomes a human strategy to dominate and control the image of the world as it struggles to appear.

Cinema promotes a decidedly non-anthropocentric perspective, and too much human intervention undermines this precious point of view, turning it away from the real and back toward the human. The result is a mode of representation Bazin calls, "pseudorealism." That is, "a deception aimed at fooling the eye (or for that matter the mind)" (2005a: 12). Pseudorealism duplicates the world that conforms to the way humans imagine it and wish it to appear, evidenced by the ancient Egyptians who tried to suggest life in the embalmed bodies of their loved ones. Pseudorealism serves a primarily therapeutic function, affirming the human over the world. With the invention of the camera, there was no longer a need to settle for pseudorealism; but many films resorted to it anyway.

"Look carefully at bad films" Bazin proclaims, "and you will see that they are composed of nothing but symbolism and signs, of conventions, of dramatic, moral, and emotional hieroglyphs" (1973: 84-5). Despite their beauty, technical artistry, and documentary realism, much of contemporary wildlife imagery— in the vein of the BBC's much celebrated series, *Planet Earth* (2006)—constitute "bad" or anti-realist films. They manifest the dominance of human idealism over worldly realism. This imagery denies the reality of nature, by producing nature as a mythical place, a sanctuary untouched by the processes of modernity. They suggest on the one hand that it is a space humans left behind for the sake of progress, but, on the other, one that remains ever a

palatial sanctuary lying in wait for our prodigal return. In both cases, they summon the natural world as a fantasy space for us.

They also promote a voyeuristic and expansionist gaze, one characterized by what Pick calls “ocular inflation” (2013: 21). This enhanced visibility of nature extends the limits of the human gaze, without ever tending to the implications of human presence. They make nature fully available to the camera and give the impression of immersive closeness with nature. And yet this closeness can only be achieved through conceptual distance. Any acknowledgement of proximity would threaten nature with the corrupting touch of culture. The desire to protect nature from human interference and cultivate an appreciation for its sublime, untouched beauty appears well intentioned. However, it actively precludes any possibility of approaching nature in more responsible ways. “Putting something called Nature on a pedestal and admiring it from afar does for the environment what patriarchy does for the figure of Woman,” Timothy Morton contends in his critique of environmentalism: “it is a paradoxical act of sadistic admiration” (2007: 5). What it admires is not nature as it actually appears, but nature as a concept created and sustained by humans.

In drawing attention to the frictions that occur between the aesthetics of animal images and the processes and contexts of their production, accidental animal videos actively impose limits on the omnipotence of the human gaze. They thwart the human voyeuristic fantasy of total access to pure, deep nature separate from culture. What they offer instead are glimpses of true wilderness, a representational frontier that resists human control, does not respect the nature-culture divide, and troubles the centrality of the human. In so doing, accidental animal videos are doing something expressly realist, and cinematic.

Bazin appreciated cinema because it decentered and sometimes eclipsed the human, positioning it “only as an accessory, like an extra, or in counterpoint to nature which is the true leading character” (2005a: 102). But this is not because he devalued human beings. To the contrary, Bazin held the human in high esteem. He merely felt that the valuation of the human should not come at the cost of the devaluation of the non-human. Cinema encourages us to appreciate that, in reality, humans do not occupy the centre of the universe. In the cinema, just as in real life, the human has “no a priori privilege over animals and things” (Bazin 2005a: 106). While Bazin was a humanist, his ontology is so generous that Jennifer Fay insists that his humanism is much “more capacious and creaturely than is typically acknowledged” (2008: 42).¹⁶

In accidental animal videos, animals and cameras are the primary creative catalysts for production of the images. When the human is displaced, the world is able to transfer something of itself into the image; nature sets the scene. This, in turn, provides the film world the necessary structural integrity for it to support its inhabitants—human and non-human alike—and create space for imagining and making possible new relationships. As largely the aesthetic achievements of non-human intervention, accidental animal videos re-affirm the importance of the non-human to cinema’s unique world-making and world-disclosing capabilities. They are important reminders that the camera is not an extension of the human, nor a complement, a superior analog to the human sensorium that makes the world fully accessible to our control. Rather the camera is, at its best, a potential corrective to errors of Agamben’s anthropological machine.

¹⁶ In this way, Bazin prepares the way for object oriented ontologies which have recently come into fashion, which propose that all things equally exist, even though they may not exist equally (Bogost 11).

Cinema functions primarily as a non-human, and non-anthropocentric mode of intervention between humans and their environments. It offers something we do not control or anticipate. As much as the human decides what to record, and positions the camera accordingly, once she releases the shutter, a process wholly beyond human control takes over. The resulting image is produced by a complex interaction between camera and world.

Instances where non-human agents and forces become the aesthetic catalysts for cinematic creation only help amplify this process. Bazin's attention to small details such as "the murmur of a waterfall, or the rushing sound of soil escaping from a broken vase" served for him as assurances of a world coming into being (2005a: 110). At the same time, they also re-emphasized the fundamental role of uncontrollable—non-human— aspects of representation to the images' communicative power. The camera, by being amenable to the lively dynamism of the eclectic materiality of the *mise-en-scène* becomes much more than a conduit for human desires, it is a conduit for the world coming into presence.

V. The Photographic Blind Spot, Extended, Amplified, and Deconstructed

Accidental films are not significant simply because they show something remarkable; they are significant because they show something remarkable, unintentionally. They are steered less by the human operating the camera, and more by the dynamics of the event unfolding. At issue is their timing, not simply their technique. The details of what they show are less important than the random collusion of forces that enabled them to show something at all. Accidental films emphasize the camera's automaticity and its access to contingency by suggesting the wealth of what can be

achieved when the camera slips out of human control. They emerge as a result of forces that are initially incidental to the event, but once the films are made, become essential and inextricable from the event.

The surplus value of images, as Peter Geimer notes, typically depends on this slippage. He writes, in “Image as Trace: Speculations About an Undead Paradigm,” that this value is largely generated in the photographer’s “blind spot” during the split-second of photographic capture. Once the shutter is activated, whatever slips into it is out of human control (Geimer 19). Images are what manifest at the very moment when “artistic intention coincides with the unexpected, the unpredictable, the chance event” (Geimer 19).

Bazin similarly argues in “The Ontology of the Photographic Image” that what grants the photographic image its unique power is that it is made automatically, without human intervention. But Bazin sees this contingency as more than simply photographic surplus. Instead of being in excess of photographic reproduction, he argues, it is essential to it. While the human photographer can bring something of her personality to the image, it is not crucial to it (in fact, in many cases it is even detrimental to it). What is essential to the image is what was not intentionally brought in. This becomes especially clear for Bazin in instances where this photographic blind spot is extended and amplified. In those fleeting moments when the intrusion of the contingent is so powerful that it thwarts human intention entirely, something truly cinematic is created.

One example Bazin provides is *Annapurna* (1953), Marcel Ichac’s documentary about a group of mountaineers climbing a ridge in the Himalayas. When an avalanche snatches the camera from the hands of French mountaineer Maurice Herzog during the making of the film, the filming stops. The story is only able to pick up a day and half

later, at which point Herzog and his companions appear to have endured an “ascent to a hell of ice” (2005a: 162). The forces and conditions working against them were so inhospitable, Bazin writes, that they were not able to “preserve the camera’s sight of it” (2005a: 163). This lapse, rather than an interruption or a failure to represent, is an acknowledgement of the film’s—especially harsh—circumstances of production. At the same time, it testifies to the limits of the camera to truly and totally capture the experience, and the boundlessness and intractability of reality.

Bazin points to a similar incident in *Kon Tiki* (1950), Thor Heyerdahl’s amateur film about a small group of scientists travelling a 4000-mile nautical expedition to Polynesia on a rudimentary raft. When a whale shark jumps aboard their flimsy vessel, it forces the men to drop the camera. The filmmaking must stop in order for that they may protect their lives. The scene is therefore only partially rendered. The footage of the scene, Bazin remarks, “is so short that you have to process it ten times over in the optical printer before you can spot what is happening” (2005a: 161). Again, rather than a failure to represent reality, Bazin reads this as an achievement of reality, its incommensurability is acknowledged in the laboured process of representation.

The film does not wholly depict the encounter between the men and the shark; it offers something far richer. The shot, he observes, “was taken at the very moment when a capricious movement of the monster might well have annihilated the raft and sent camera and cameraman seven or eight thousand meters into the deep” (2005a: 161). As such it evokes more accurately the danger, the stakes of the action (2005a: 161). It draws attention to and accentuates the vexed physical relationships between human, animal, and camera, relationships that extend well beyond the image. “The missing documents are the negative imprints of the expedition—its inscription chiselled deep,”

he writes (2005a: 162). *Kon Tiki*'s elliptical images become clues that accumulate, like pieces of a puzzle that we must work with in order to figure out the world of the film. They are like "those moss-covered stones that, surviving, allow us to reconstruct buildings and statues that no longer exist," Bazin writes (2005a: 160). This movement from the image toward reality and back again suggests the complex vector of relations that constitute realism.

Kon Tiki not only has missing parts, it is also full of imperfections. Bazin notes that the crew had little knowledge of how to use a camera. This coupled with poor shooting conditions results in a film that is riddled with problems from wrong film speeds to errors in exposure and jerky camerawork. And yet, Bazin writes, "*Kon Tiki* is an admirable and overwhelming film" that "manages to be the most beautiful of films while not being a film at all" (2005a: 161, 160). Rather, its "fluid and trembling images are as it were the objectivized memory of the actors in the drama" (2005a: 161). The imperfections testify that the camera was not just a witness to whatever transpired, it was also an active participant in its coming into being. Bazin extolls *Kon Tiki* because "the making of it is so totally identified with the action that it so imperfectly unfolds" (2005a: 161). Its poor quality corroborates just how tightly its images are tethered to the material conditions of their production. The camera is too intimately entangled with the unfolding of the events it attempts to capture to successfully represent them.

For this reason, accidental films, as Bruzzi notes, are examples of "non-fiction film at its most objective" (10). This objectivity, however, hardly satisfies our desire to know, Bruzzi adds. They aspire to reveal what will always remain beyond the images: the motivation and the causal forces of the actions they depict (Bruzzi 21). The Zapruder footage, for example, promises to disclose what really happened to JFK on

that fateful November day. Likewise, *Annapurna* and *Kon Tiki* aspire to relay the details of dangerous historically significant expeditions. They excite a desire to know, but ultimately neglect to satisfy that desire. However, their value as records is not located in the content itself, so much as the forces and phenomena that give shape to that content. Accidental films are not records of reality so much as they are records of the complex and dynamic processes of representation. Their unintended imperfections suggest the hard work of containing a recalcitrant reality in cinematic form. For Bazin, this indeterminacy catalyzes a discovery or an acknowledgement of aspects of reality that we have either renounced, forgotten, or ignored.

Accidental films may seem like marginal, ephemeral forms, incidental to cinema's history, its theory, and its canon. However, they are in fact essential to them. Their characteristic feature—the camera slipping from human control—more than some curiosity is a constituent of cinema itself. Whether it is the velocity of an avalanche, the weight of a whale shark, or in the case of “octopus steals my video camera” the suctioned grip of an octopus, these tertiary, autogenic intrusions, seemingly peripheral to and indifferent toward the human, and “aesthetically at odds with the rest of the work” are what make a film truly realist, and thus cinematic (Bazin 2005a: 110). They intensify the operations of cinema's essential mechanism—its capacity to link up and move between worlds—and illuminate the extent to which this movement relies specifically on its non-human remove. This is what accidental animal films show us about cinema. They also show us something about the reality of animal lives, and the material-discursive strategies used to suppress it.

VI. Making Nature Untouchable: The Discursive Regime of Wildlife Imagery

As Matthew Brower makes abundantly clear in his material-discursive history, wildlife imagery is not simply a byproduct of turning cameras toward animals in their environments (193). The practice of photographing animals is not an unintended upshot of the development of photographic (and proto-photographic) technologies. Taking a camera into animal environments or reaching for the camera during an animal sighting might appear innocent, instinctual, or organic. But in fact, the forces that motivate such actions, and support and maintain them are far more complex. They are also deeply entangled in the larger material-discursive maneuvers of modernity, that attempt to organize animals and humans, nature and culture in strategic ways.

These machinations do not take place outside the image either, they are made manifest in the aesthetics of the imagery itself; if not exclusively in the frame, then in the tension to which it alludes between what is inside and outside the frame. As Brower skillfully illustrates, looking carefully at images of animals in full consideration of their conditions of production—from the material and technical particularities of the camera, the animal's disposition and comportment, and the physical arrangement of camera, animal, and human in relationship to one another—can help us situate those conditions of production within larger material-discursive histories.

The practice of documenting wildlife, as Brower demonstrates, has involved a variety of technologies and techniques over the years, and these variations directly correlate with shifting discursive interests that marshal animals and nature in particular ways. Currently the practices of making wild animals visible are informed by what he calls “the discursive regime of wildlife photography” (xvii). It manifests in voyeuristic

images, wherein animals are highly visible and oblivious to the presence of the camera, and all signs of mediation are obscured and unacknowledged in the image itself.

This regime insists on not only separating nature and culture, but also representing nature as a “world empty of humans and their traces” (Brower 83). Nature becomes a space outside culture that can only be accessed with the camera. The camera serves to absolve the human of the burden of directly engaging and negotiating with the animals. Brower is not the only one to remark on this trend. Gregg Mitman likewise observes in his work *Reel Nature: America’s Romance with Wildlife on Film* that conventional imagery of wild animals tries to “capitalize on our desire to be close to nature, yet curiously removed from it” (206). Meanwhile, Derek Bousé identifies a similar “ethic (or an illusion) of nonintervention” in his genealogy of wildlife documentaries (27).

Brower traces the emergence of this discursive regime back to the development of an apparatus called “the photographic blind.” The photographic blind refers to an enclosure used to obscure the photographer and the camera from the animal being photographed. Of course, before it formally materialized, it was an idea, one made imaginable by technological improvements to cameras such as longer focal lengths which allowed for greater distance between animal and camera. With the introduction of the telephoto lens, for example, close-ups of wild animals could be achieved without having to be physically close to them, or engage with them directly. This technological particularity made it easier to produce animal images, it also marked the beginning of a certain voyeuristic aesthetic.

This in turn, cultivated a sense that the invisibility of both the camera and the operator, and the indifference of the animals granted more authentic access to the truth

of animal lives. As Brower remarks, “the observer’s invisibility comes to authenticate the image and the animals depicted, fostering a conception of animals as occupying a radically nonhuman space” (Brower 2011: xxix). In this way the blind is also a discursive apparatus, one that builds on the visual logic of the *camera obscura*. That is, it separates nature and culture by aligning the former with an objective ground for truth, and the latter with the deceptive terrain of subjectivity (Brower 2011: 109).

Underlying this separation of nature and culture is a rhetoric of purity and protection, one that is cemented by an even more significant separation: that of sight from touch. The photographic blind insists above all on the obfuscation of all signs of direct contact. The familiar platitude, “take only pictures, leave only footprints,” implies that turning cameras on animals in the wild is a nonintrusive and benevolent activity that “shows proper respect for the fragility of nature” (Brower xiii). Looking without touching is construed as the ideal way to relate to animals.

This separation of sight from touch is another modern maneuver. Touch, as Jonathan Crary argues in *Techniques of the Observer*, was actually understood to be an important component of vision in the 17th and 18th centuries. But by the 19th century, touch came to be disassociated from sight. This process, Crary explains, was part of the larger separation and abstraction of the senses caused by the technological and industrial remapping of the body (19). “The loss of touch as a conceptual component of vision,” Crary suggests, “meant the unloosening of the eye from the network of referentiality incarnated in tactility and its subjective relation to perceived space” (19). That is, the separation of sight from touch, and the consequent prioritizing of vision over other sensory faculties greatly reduced the ability and desire of the observer to appreciate the wider dynamic fields of action in which she was a part.

This partitioning of nature from culture at the intersection of sight and touch remains rampant in modern wildlife imagery in the trope of visible but “untouched” nature. The aforementioned *Planet Earth* (2006) is the most obvious example of this.¹⁷ While *Planet Earth*’s exhilarating imagery is a product of many years of human time and labour, the series—its existence, its popularity, and the fact that it singlehandedly renewed a staid genre— is primarily indebted to the new technological capacities of cameras.¹⁸ It was, after all, the high-definition, ultra-high speed, compact, lightweight digital cameras that allowed “Earth” to be seen, as the series byline announces, “As You’ve Never Seen It Before.” And yet as much as these technological affordances are heralded in the series’ promotional material, there is no trace of them in footage itself.

The cameras never intrude; they remain relatively unacknowledged by the animals they record. While the animals may inadvertently meet the camera’s gaze from time to time, they certainly never touch the camera or encourage contemplation of its presence. Animals swim, fly, or amble across the frame as if the cameras and the myriad of filmmaking apparatuses were not present at all. This invisibility is further assured by the disembodied voice of narrator David Attenborough, who speaks from a safe “elsewhere” so that his presence does not tarnish the pure, unmolested nature disclosed in the frame. *Planet Earth* retains the fantasy of having full, effortless access to deep nature by simply looking at it, but never touching it.

Conventional wildlife imagery, exemplified in *Planet Earth*, obscures any and all encounters between animals and cameras. It uses strategies to distract the spectator

¹⁷ Others include the BBC’s *The Blue Planet* (2001) and *Frozen Planet* (2011), as well as Disney’s more recent foray (to say nothing of their previous ventures) into the genre with films like *African Cats* (2011), *Chimpanzees* (2012) and *Bears* (2014).

¹⁸ Not the least of which is the cineflex heligimble, a gyroscopic stabilizing mechanism that created new possibilities for high quality aerial cinematography (Slenske 2007).

from even acknowledging their actual proximity by playing up other kinds of animal encounters, contingencies, and novelties. As Mitman writes, in Walt Disney's early documentary series, *True Life Adventures*, filmmakers often pursued unexpected happenings (119). These episodes of action, also called "nuggets," became crucial to wildlife films. Highlighting the quirks of individual animals was a means to assure audiences that they were seeing something rare and singular—a direct affordance of the camera's invisible and omniscient eye.

These sequences also helped guard against the inevitable banality that characterizes much of the footage of animals in their environments, and contributed to Disney's success in monopolizing the market. Though elemental to wildlife films, as a result of time constraints and technological limitations, these chance encounters were often not left up to chance. Disney's *White Wilderness* (James Algar, 1958) for example, is known for its rare, unrivaled footage of lemmings (Arctic rodents) committing mass suicide by hurling themselves off a cliff into the Arctic Ocean. In reality however, the lemmings were forced to jump by a contraption set up by the filmmakers. Meanwhile, their watery grave was not the Arctic ocean but rather the Bow river in downtown Calgary (Bousé 65).

These representational strategies not only functioned to divert attention away from the logistics and contrivances of filmmaking, but by cultivating seemingly-singular spectacles, they also affirmed the value and necessity of keeping humans and signs of civilization out of the picture. The insistence on separating animals and humans at the level of the image functions as a kind of protective partitioning: it safeguards animals from humans, and humans from animals. Of course, the irony is that the production of animal imagery can actually be incredibly disruptive and destructive to animals.

Animals are harassed, stressed out, injured, and often killed. And yet the rhetoric of wildlife imagery continues to deny that any actual interaction between animals, cameras, and photographers does, can, or should take place. As such, it offers no space to account for such encounters or address them in potentially more positive, mutually beneficial ways.¹⁹ This continued insistence on the irreconcilable opposition between nature and culture forecloses any other possibilities of being otherwise.

The desire to see animals from an impossible, unbridgeable distance speaks to a fantasy of human clairvoyance and omniscience. The associated desire to make the human invisible, and produce images of animals as if humans were not present, enables animals to appear in the space of deep nature that is not only outside culture, but also outside history. As it appears in wildlife documentaries, nature unfolds on its own time. With the camera, humans have access to this exclusive realm. And though humans are not part of it, it nevertheless exists for humans. This nature is a lost, pre-cultural, pre-technological Eden we have supposedly left behind, and at the same time it becomes a future shelter, a place to begin again once we have presumably destroyed the world.

Amateur content is not immune from this seductive cultural logic. Accidental animal videos are a case in point: they start out with all the conventional trappings of wildlife imagery, and a specifically human agenda. When Victor Huang went diving that day, for example, he not only took his underwater camera with him, he also brought his spear gun. The latter may have been merely a precaution, but its inclusion suggests that

¹⁹ Humans likewise need to be protected from animals—as demonstrated by the fate of Timothy Treadwell in Werner Herzog's *Grizzly Man* (2005). In some ways, *Grizzly Man* offers a counterpoint to conventional wildlife imagery, framing nature as ruthlessly indifferent to the human, and drawing attention to the unseemly intimacy between bears, humans, and cameras. Nevertheless, it still suggests that fatalities between animals and humans are inevitable. Animals and humans, nature and culture are violently, irrevocably, incompatible.

regardless of how inchoate his intentions, they were not innocent. The production of wildlife imagery never is. Huang was very clearly on the hunt that day, if not for animals, for animal images. As he swam closer to the octopus with his camera at the ready, he betrayed that well-worn desire, conscious or otherwise, to mobilize the animal body as an idealized figure of nature.²⁰ That is, a symbol culled from an eternal, immutable realm outside the time of history or the space of culture. In his hunt for nature, to take something from it, Victor Huang presumed to be outside of nature. He could not have been more wrong.

VII. Wildlife Imagery, Interrupted or, Unsettling the Fourth Wall

The only way to trouble and dismantle the discursive regime of wildlife imagery, Brower suggests, is to denaturalize it (xviii). One way to do this is by focusing on its conditions of production; more specifically the traces of these conditions as they are manifested in the aesthetics of the animal imagery itself. This is what Brower manages to do in his work, illustrating how images of wildlife always suggest something about animal-camera relationships.

For example, the first photographic images of animals were not exactly “wild.” Rather, they featured tame, captive, or domesticated animals, and sometimes even dead and taxidermied ones. These images depicting docile or inert animal bodies are not a result of a human inclination to see animals in this way; instead they suggest a fundamental incompatibility between the materiality of the first cameras and the

²⁰ The added detail provides an unwitting throwback to a time when hunting for animals and hunting for animal images were in fact materially and discursively entwined. The practice of “camera hunting” was popular in the 19th century, wherein images of animals were taken along with and, eventually, instead of their lives (see: Brower 25-82).

dynamic and unpredictable comportments of wild animals (2011: 27). Early cameras were cumbersome with delicate parts, and were therefore difficult and awkward to transport into the field. They also required long exposure times, which made it impossible to photograph the spontaneous and rapid movements of live animals in the wild.

Eventually wild animals replaced tame ones, but this new kind of animal photography was characterized by animals featured in close-up, often with “startled, frightened, and angry” expressions (Brower 2011: 38). Again, rather than a human stylistic predilection, these images evinced, on the one hand, what faster shutter speeds and quicker exposure times could achieve. But on the other they suggested the limits of short focal lengths, and the uncomfortable physical proximity to animals that such lenses required (Brower 2011: 33). Many photographers had to rely on invasive hunting techniques in order to apprehend elusive and wily wildlife (Brower xxviii).

Modern animal imagery, meanwhile, represents wildlife in clear, richly-detailed close-ups, where animals appear oblivious to the camera (Brower xxix). Likewise, this is not simply an artistic choice; it is also an affordance of the increasingly longer focal lengths of cameras, which allow animals to be photographed without having to be physically near them. At the same time, this aesthetic also developed out of the protective camouflage of the photographic blind, a contraption under which the photographer armed with a camera could take photos of animals nearby while remaining unseen.

Accidental animal videos mark the arrival of new aesthetic of animal imagery, and therefore, another shift in the relationship between animals and cameras. They make visible what is typically obscured in modern wildlife imagery—the process of

mediation. These videos constitute a kind of “anti-photographic blind” that redirects our attention away from the image, to the current frictions and negotiations that transpire between the aesthetics of animal representations and the conditions of their actual production. Not only do they illuminate the fraught materiality of animal imagery, they also suggest the particularities of that materiality.

As much as accidental animal videos are beholden to chance, they are nevertheless reliant on a set of preconditions regarding the material relationship between animals and cameras. In fact, the more we consider these relationships and the conditions under which these videos are produced, the less accidental they begin to appear. The proximity of animals and cameras, always a condition of wildlife imagery, has been steadily escalating, particularly in recent years. By available evidence, it certainly seems as though wild animals are becoming increasingly camera-aware, if not technically savvy. Animals are, more and more frequently, having close encounters with cameras.

These meetings are made possibly by changes to the materiality and functionality of the photographic apparatus, which make them more perceptible and accessible to animals. The cameras at the crux of these encounters are not just digital, but also smaller, lighter, more mobile and maneuverable. Sometimes they involve camera phones, but more commonly they involve rugged and compact personal digital cameras made for producing high definition, extreme action video. Such cameras tend to be designed for filming on the move during kinetic situations. They have fixed lenses and do not involve moving, breakable parts. Network enabled, they can communicate remotely with paired peripheral devices and the Internet. They can be carried close to bodies, sometimes even affixed to them. They can be mounted to almost anything:

fastened with suction cups, they can be affixed to a bicycle, a surfboard, or the arms of an octopus.

Stable vantage points are not required, nor are human perceptual systems. They can operate without the human, and can even be handled by animals. That they are not handled expertly is beside the point; what matters is that they are handled at all. The ubiquity, portability, accessibility, functionality, capacity, and network interoperability of cameras and camera-enabled devices make animals more available to image capture and grants these moving and still images wider distribution. However, these same affordances also make them accessible to animals themselves, to their gaze but more importantly, their touch.

The camera's increasing accessibility to animals reaches fruition in accidental animal videos, but the intimacy between them has been building for some time. This is evidenced by adjacent phenomena like animal "photobombs" or "videobombs." These "bombs" name the process by which the framing of a photo or a video is unintentionally disrupted by an animal at the moment of recording. The most indelible example of this occurrence is that of "Crasher Squirrel," the rodent that accidentally appeared in the foreground of Melissa and Jackson Brandts' self-portrait at Banff National Park in 2009. After pre-programming the shutter release on their camera, the Brandts placed the camera just a few feet away, and posed in front of the Rockies. A ground squirrel, likely alerted by the camera's peculiar beeping sounds, stumbled into the camera's view at the last minute and inadvertently displaced the Brandts as the focal point of their photo.

Meanwhile, animal self-portraits, or "selfies," are also indications of this increasing camera-awareness. In such circumstances animals are often the intended or

desired subjects for the camera, but in an unexpected turn, animals end up addressing the camera directly. These animal-camera encounters result in candid animal portraits, where animals appear as if they are intentionally posing for the camera. They are commonly associated with pets—due to their proximity to camera-enabled phones, tablets and laptops in human environments—but they also increasingly involve non-domesticated animals.²¹ The case of the macaque monkey selfie in Indonesia that opened Chapter 1 is perhaps the most notable example of this, thanks in no small part to its involvement in a unique copyright case (Gibbs 2014).

These wild, feral, free-range, semi-captive, or domesticated animal “selfies” are fortuitous, materializing from animals investigating these devices. Not only are they suspicious of the intrusive cameras of amateur and professional nature and wildlife photographers. They are also aware of hidden cameras, such as the seemingly unobtrusive ones found in camera traps. In the Bolivian jungle for example, Andean bears have been known to dismantle surveillance cameras hidden in trees (Gannon 2013). More and more, animals are activating the shutters of camera traps set up by scientists, not simply by walking past them, but by closing in on them for careful inspection (see for example, McPherson 2014; Fig. 2.1).²²

²¹ “Snapcat” promotes the tagline “Photos of Cats. By Cats.” It facilitates “selfies” by luring cats into a virtual photo booth with red laser-like screen animations. The cursor works as a shutter; when the cat touches it, it activates a built in camera and produces cat “selfies.”

²² See “Animal Selfies: Wildlife Photographs Taken by Remotely-Activated Camera Traps in India” (Sim 2014), for an impressive series of animal “selfies” gleaned from camera traps placed by Wildlife Conservation Society-India. For a more comprehensive exploration of camera-trap photography, see Roland Kays recent monograph, *Candid Creatures: How Camera Traps Reveal the Mysteries of Nature* (2016).

Fig.2.1 Snow Leopard Caught in Camera Trap. Photo by Richard Bischof, Norwegian University of Life Sciences and Muhammad Ali Nawaz, Snow Leopard Foundation, Pakistan (2014) Source: National Geographic (McPherson 2014).



As the long history of photographing and filming live animals suggests, cameras have figured in the day-to-day lives of animals in varying ways at different scales. However, in the new media environment, this presence is becoming more pronounced. Cameras are not only nested in smartphones, tablets and laptops, but camera traps are set up in the most remote and inaccessible areas. Live streaming surveillance cameras are positioned in intimate animal spaces, and high performance cameras like those in the GoPro series or “Cittercams”²³ are physically mounted to animal bodies. Sometimes, cameras even end up inadvertently in animal spaces. In the summer of 2014, for example, a skydiver’s helmet-mounted GoPro was dislodged just before he was about to jump. The camera fell thousands of feet and landed in the muddy earth of a pigpen, recording all the while. By chance, the camera settled with the lens facing upward, and it was able to capture footage of an inquisitive pig as it tried to determine

²³ Developed by Greg Marshall, it is an apparatus that includes small cameras mounted to animal bodies to depict the world from the animals’ point of view. Cameras are custom fitted based on individual species physiology.

the device's edibility. The camera, and the resulting footage, were finally discovered months later by Mia Munselle, the pig's caretaker (Kooser 2014). She uploaded the footage to YouTube ("Camera falls from airplane and lands in pig pen" 9 Feb. 2014) (Fig. 2.2).



Fig. 2.2. Pig investigates errant GoPro in "Camera falls from airplane and lands in pig pen" (Mia Munselle, USA, 2014). Author's screenshot. Source: YouTube.

Cameras are now more than ever substantially integrated in the living spaces of domesticated, feral, and wild animals. And from available evidence, animals are discerning and highly reactive to these devices. As the above examples suggest, animals are exploring these objects emerging in their everyday surround and beginning to probe their significance—even when humans go to great lengths to hide them.

Accidental animal videos take this animal-camera relationship to the next level. For not only are animals taking notice of cameras, they are taking control of them, and by extension the processes of image production. In seizing this control, animals are unintentionally promoting themselves as recalcitrant subjects, resisting human attempts to frame them. At the same time, they are also redefining the terms and conditions of representation. What they are producing instead is a parade of "disrelated images." The concept, coined by Shane Denson, refers to images that do

not correspond to the human perceptual system and trouble the correlation between human thought and being (2016).

Denson, however, identifies these increasingly dis-correlated images as a new phenomenon, aligning them with Steven Shaviro's notion of the "post-cinematic." That is, the new media dispositif wherein the cinematic camera has been replaced by mobile digital imaging apparatuses. Allegedly, these post-cinematic cameras produce images that generate "a kind of ambient, free-floating sensibility that...cannot be attributed to any subject in particular" (Shaviro 2). The power of the dis-correlated images of the post-cinematic supposedly lies in their ability to provide valuable counter-images to the correlated images of the cinematic.

Shaviro and Denson are speaking of course to Vivian Sobchack (1992) and others who have argued that the cinematic apparatus is analogous to human corporeality and subjectivity. Certainly, the "handheld" camera can amplify this aesthetic of human embodiment. The perceptible, uneven movements of the camera can accentuate the body of the camera operator, and its interaction with the profilmic world (e.g., Albright 2011; Hesseberth 2014). This close visual-tactile relationship between the human body and camera has, in the past, created a particular metaphysics of human authorial presence. However, this human correlation is not endemic to the cinema.

By seizing the camera, and taking control of its movement and its framing, animals are overtly disturbing this perceived homology between the camera and the human filmmaker, the screen and the spectator. In "octopus steals my video camera," for example, the "multi-arm-held" aesthetic alludes to an especially mysterious metaphysics: the perceptual alterity of cold-blooded, marine-dwelling invertebrate being. This alien presence is invoked by dis-correlated images, but rather than

announcing a new post-cinematic sensibility that departs from the cinematic, these images mark a return to it. That is, they amplify and intensify the fundamental non-subjective dimension of cinema that has been there all along. Cinema can, and certainly has, affirmed and reproduced this correlation between human and camera, but it is not essential to it.

VIII. Animals, Alterity, and the Confrontational Power of the Cinematic Image

“Octopuses are intriguing and unpredictable.”

—Roland C. Anderson, Jennifer A. Mather, and James B. Wood, from *Octopus: The Ocean’s Intelligent Invertebrate* (9).

The enigmatically alien nature of octopuses has been a wellspring for the modern imagination. It certainly factored into Jean Painlevé’s and Geneviève Hamon’s surrealist science film, *The Love Life of the Octopus* [*Les Amours de la pieuvre*] (1965). Their film does indeed produce, as Eva S. Hayward claims in her thoughtful analysis, “a refracted spectatorship that bends the spectator away from self-reflection and self-identification toward a Surrealist disorientation and displacement” (29). Read another way, however, the film merely augments the disorientation that the octopus itself already produces in the human just by its very appearance.

Fiction writers have been exploring the surreal experience of octopus’s alterity well before Painlevé and Hamon. The octopus was the central inspiration for H.P. Lovecraft’s evil primordial deity first introduced in the short story, “Call of the Cthulhu” (1928). Octopuses also figured largely in H.G. Wells’ *War of the Worlds* (1897) as a hostile race of aliens set on the extermination of humans. Meanwhile, Victor Hugo was

preoccupied by the creature's terrifying "unreality" in *Toilers of the Sea* (1866).

Octopuses, the novel's narrator proclaims,

mark the transition of our reality into another. They seem to belong to that commencement of terrible life which the dreamer sees confusedly through the loophole of the night [...] They are indeed phantoms as much as monsters. They are proved and yet improbable. Their fate is to exist in spite of *à priori* reasonings. (295)

Hugo's protagonist, Gilliatt, is wholly unable to identify with or even understand the creature. It is nearly a complete inversion of human existence, calling into question the very authority and exceptionality of human seeing, knowing, and being. In addition to fighting for his life, Gilliatt must also fend off the paralyzing existential dread that the creature incites. In confronting the octopus, Gilliatt faces the more-than-human mysteries of existence, and the human being's cosmic insignificance in an arcane universe.

Because the outward appearance of the octopus is so significantly different than anything humanly familiar, it challenges the possibilities of the sympathetic imagination. They have long been mobilized as potent figures of difference for humans. At the same time that Charles Darwin's theory of evolution was refiguring conceptions of the human and of life itself, octopuses emerged as terrifying reminders of the irrepressible persistence and the seemingly supernatural achievement of ostensibly primordial forms.

Octopuses have head-like mantles and two large eyes that have focusing lenses capable of seeing high-resolution detail. This is the extent of their similarity to humans. Their eyes are on either side of their mantle; their pupils are rectangular slits, which grant them greater peripheral vision. They also get additional sensory information from

their extra-ocular vision. Thanks to photosensitive skin cell receptors, they can change texture and color to either put themselves on display, or to camouflage themselves, depending on their needs. They are also cold-blooded organisms and their circulatory system is not centralized: they have three hearts that pump blue copper-based blood.

As invertebrates; they do not have a central nervous system. Instead, their intelligence is distributed across eight, “smart” arms, which can operate with or independently of each other. One arm can even grow back should one be severed. Each arm has hundreds of pliable, sensor-rich suckers, adept at gripping and maneuvering objects, as well as smelling and tasting them (Schweid 35). As such, they are surprisingly nimble and cunning. In the wild, they are known to enter crab traps, eat the crabs, and then leave again before the traps are pulled up to the surface. In captivity, they have surreptitiously escaped from and returned to their enclosures, and have even dismantled aquariums (Schweid 13).²⁴

They are able to exist and thrive in all oceans, at every depth and in the most inhospitable of environments. They can even survive for a time on land, and despite being boneless, are able to crawl. In the water, they are strong and fast swimmers. They get around by contracting and shooting water through supple internal funnels. They also use this technique to move sand, rocks, and other debris in order to dig up hidden prey, clean out their dens, and push away intruders. As protean forms they demonstrate incredible flexibility. Some, such as the mimic octopus, are impressive shape shifters, and are able to take on the shape and comportment of other species. They are often prey, but also accomplished hunters. They have chitinous, bird-like beaks that are well

²⁴ Just recently, Inky, a Giant Pacific octopus made headlines when it escaped from the National Aquarium of New Zealand in Napier and disappeared into a drain pipe near its tank, never to be seen again (Bilefsky 2016).

muscle, and can inject poisonous venom into a wound (Anderson, Mather, and Wood: 111).

Their physiological otherness, encourages the uncomfortable contemplation of a wholly foreign, and ancient mode of being. After all, the incredible ancestral lineage of modern day octopuses goes back over 400 million years (Schweid 14). As much as octopuses are strange, they are also old and familiar, evoking a feeling of the uncanny. To return to the Hugo quote above: they “mark the transition of our reality into another” (295). Their peculiar, un-human bodies can summon with them an equally bizarre unreality, one that does not simply invert human understandings of reality, but also precedes the very notion of it. Encounters with animals can generate surprising juxtapositions between bodies and between worlds, but octopuses especially so, thanks to their particularly significant otherness. This confrontation with radical otherness is homologous to the encounter with the cinematic image itself. Animals and cinematic images, Pollman writes, “have a lot in common, for both affect our understanding of ourselves and our bodies, our relationship to other creatures (and to creatureliness), and our ability to reflect on or sense vitality” (2011: 128).

The parallels between animals encounters and cinematic experience was not lost on Bazin, whose interest in cinema was inseparable from his interest in animals. As a film critic he loved cinema, but he also loved animals. “He kept all sorts of pets,” François Truffaut writes in his foreword to *What is Cinema? Vol. 2*, “a chameleon, a parrot, squirrels, tortoises, a crocodile and other creatures I cannot list because I don’t know how to spell their names” (2005b: vi). While all animals fascinated Bazin, unusual and less charismatic ones captivated him especially. He was particularly concerned with reptiles, Dudley Andrew notes in Bazin’s biography, for “despite a lifetime of study, he

could never quite imagine how they experienced the world” (1978: 12-13). Animals presented a different mode of being in and engaging with the world. That they carried on with their own private, mysterious lives in tandem with our own was a reminder for Bazin that reality is not reducible only to that which appears to us. Animals demonstrated the way cinematic images work: that is, by “harboring surprises and discoveries yet to be made” even in the most carefully constructed environments (Andrew 1978: 12).

Bazin valued these tensions between stability and instability, between legibility and indeterminacy, and predictability and contingency. For him, they accentuated and cultivated attention toward the fundamental tension between reality and representation at the heart of cinema. He appreciated these frictions wherever they appeared—between a character and a prop, an actor and a character, a script and a performance, a filmed event and its representation. Observing this predilection, Serge Daney suggests that Bazin’s fundamental law for filmmaking is “whenever it is possible to enclose two heterogeneous objects in the same frame, editing is prohibited” (32). The tension between different phenomena incites irreversible transformations to our perception. Editing can obscure or inhibit sensory access to this metamorphosis, which explains Bazin’s respect for the long take.

Bazin was especially interested in cinematic moments involving animals. When animals are present onscreen, they amplify—more than other kinds of oppositional phenomena—cinema’s confrontational power, the source of which is essentially non-human. He tended specifically to unedited scenes where animals were framed together with other beings, such as a child and a horse in *Crin Blanc* (Lamorisse 1953), a child and a lion in *Where No Vultures Fly* (Watt 1951), and a crocodile and a heron in

Louisiana Story (Flaherty 1948). Remarking on Bazin's partiality toward animals in his writings on cinema, Daney playfully speculates that, "we shall see that the essence of cinema becomes a story about animals" (32).

Daney is not merely being provocative. Animals have in fact been present at seminal moments in the development of cinema. This presence is not coincidental; animals bring something elemental to cinema. They introduce elements of contingency and vitality, creating the possibility for transformation. Animals are part of cinema's larger project of exploring the frontiers of human perceptual experience, and rational understanding. At the same time, they operate as counterpoints to the technology's native tendencies toward representability, systematicity, and predictability. They make manifest the basic tensions at the crux of the cinematic image itself: artifice, predictability, contrivance, and intelligibility on the one hand, and life, risk, chance, and unintelligibility on the other.

Bazin himself explicitly states that, "Animal films reveal the cinema to us" (1955: 2-3,8; Cahill 267). Animals onscreen disclose cinema's ontological foundations as a non-anthropocentric medium. They demonstrate its native tendency to juxtapose worlds, and perspectives, the familiar with the unfamiliar, and different kinds and ways of being, human and non-human. They bring the medium itself into view. This is not to say that animals are just attractive symbols of otherness, useful figures that function as guarantors of the real, or proxies for cinematic contingency. Their value as sources of difference is located in the full sovereignty of their being and the fact that they belong to fields of perception and action beyond human control. Accidental animal videos amplify this fact: that animals resist and undermine our attempts to represent them. These videos affirm the dialectical struggle between reality and representation, and the power

of non-human animals to encourage us to see cinema as something that does not merely serve human desires, but serves the world, in all its more-than-human complexity and dynamism. They can help remediate how we traditionally gaze at animals, and the octopus in particular.

The transformative potential offered by the octopus's alterity has, of late, been hampered by the anthropomorphic gaze. While the 19th and early 20th century imagination fled in fear from the octopus's alterity, a century later, humans have been inoculated, seeing something familiar in their gaze: themselves. The current literature about octopuses is full of anecdotes about impressions of lucidity, mutual familiarity, and meaningful looks, which seems to be an outcome of the octopus's large, camera-like eyes, and its impressive manual dexterity. "Gazing for any length of time at an octopus," Richard Schweid observes in his cultural history of the creature, "leads to the inescapable conclusion that the animal is looking back, and is somehow thinking about what it is seeing" (1).

Likewise, Roger Hanlon, a scientist who has been working with octopuses since 1968, insists that, "anyone who has seen an octopus in an aquarium will have had the uncanny impression of being carefully watched" (Hanlon and Messenger 1; see also Wells 142). Jean Boal, a biologist at Millersville University in Pennsylvania, certainly got this impression when she tried to feed a female California mud flat octopus some old shrimp. She insists that the octopus met her gaze, grabbed it from her, swam over to the drain of her tank, and proceeded to stuff the offending item down the opening, all the while without ever breaking eye contact (qtd. in Linden 42-43).

These accounts about shared gazes, however, betray a blatant anthropocentrism. The octopus' alien otherness is eclipsed by the overwhelming

human tendency to see itself not only in the octopus' gaze but also occupying the very centre of it. As a case in point, when Victor Huang encountered that Giant Pacific octopus that fateful day, he immediately thought the octopus was after him. After all, the epic confrontation between man and nature in the primordial sea especially is deeply entrenched in our cultural mythology. That the octopus reached for the camera instead, and surreptitiously swam off with it, offers a surprising twist in the narrative. This unexpected diversion acts as a reminder that animals and technology, two supposed supplements to human subjectivity, are not necessarily supplements at all. Snubbed by the octopus and robbed of his camera, Huang's experience serves as a valuable lesson in human hubris: the human, despite its expectation otherwise, does not occupy the central position of every relationship.

IX. Aesthetic Communication and Overlapping Ecologies

Just looking,
 you think, as if such an enterprise
 were safe, as if she were not
 the pupil-Pandora she is,
 who can open a jar if only
 you'll teach her.

— "Octopus vulgaris," Nicky Beer (2008)

Octopuses are curious. They live in fluctuating, dynamic, and high-risk environments wherein they are frequently confronted by new stimuli. A curiosity about the things in their environment, probing their potential uses and risks, is a matter of their survival. No doubt, this inquisitiveness has contributed a great deal to their adaptability and their resourcefulness. Remarking on this particular aspect of their demeanor, Burghardt states, "one would expect that if any invertebrate would play it

might be an octopus” (2005: 373). Thus it is not altogether surprising that an octopus would take notice of a camera or play with it.

Play is the process whereby an animal investigates an object’s qualities and explores its limits and potentials. But whether the octopus is playing with the camera aimlessly, or for a particular purpose cannot be discerned. However, the very fact that the octopus perceived the camera at all indicates that it had designs on it. For Jakob von Uexküll, any object “becomes a carrier of meaning as soon as it enters into a relationship with a subject” (140). Animals are not merely observers, he maintains; they do not enter into relationships with objects in general, or by accident. Rather, they forge relationships with objects in particular. This means that once seized by the animal’s perceptual system the object becomes a specific carrier of meaning for it (Uexküll 140). To be a carrier of meaning, certain aspects of the object must complement an aspect of the animal’s perceptual apparatus in some way (Uexküll 143).

It may seem strange for an octopus to pursue a camera, but octopuses have already evinced familiarity with other human objects: detritus such as shipwrecks, old pipes, cans, shoes and even beer bottles.²⁵ Thus many ostensible human-world objects can offer affordances for the octopus, which means that octopuses are not only able to notice them, but are primed to perceive the potential uses of these objects. Of course, a Panasonic Lumix DMC-FT2 (TS2) is clearly materially distinct from a beer bottle; an octopus can hide inside it. For us, cameras are for making images. The octopus uses the

²⁵ During a scuba dive in Puget sound, marine biologist Roland Anderson came across eight beer bottles on the ocean floor, each one filled by a tiny red octopus (Anderson, Mather and Wood 74). The animals were clearly taking full advantage of this new resource where there may not have been any other suitable den sites.

camera to this end, albeit inadvertently. And yet, for the octopus, cameras are for something else.

To think about how the same object can figure in different environments, Uexküll's offers the example of a meadow flower, showing how an object can take on a plurality of notes depending on the kinds of "functional tones" it creates:

Plucking the flower transforms the flower into a decoration in the girl-world [decorating tone]. Running along the stem transforms the stem into a path in the ant-world [transporting tone], and the spittle-bug larva's sticking it transforms the stem into a source of building material [dwelling tone]...every action impresses its meaning on a meaningless object and makes it thereby into a subject-related carrier of meaning in each respective environment. (Uexküll 146)

The camera, like the meadow flower, by virtue of the octopus's meddling, must necessarily bear a certain functional tone.

A feeding tone is the most likely. Octopuses are color blind, so it would not have been piqued by the bright blue hue of the camera's outer finish. Their eyes are particularly sensitive to light and movement however, so it was likely alerted by the camera's illuminated LCD viewfinder screen. The brightness self-adjusts according to ambient light levels. In the semi-darkness near in the ocean floor, the camera was probably quite bright at the time. It is also possible that the camera shares a similar polarity with bioluminescence, the light emitted by some deep-sea dwellers—dwellers that octopuses also like to eat. In addition to its luminosity, the camera's small size and hard exterior may granted it a likeness to a shellfish, which octopuses are particularly fond of eating. Giant Pacific octopuses in particular enjoy big Dungeness crabs and geoduck clams (Anderson, Mather, and Wood 15).

And, because octopus have adapted to feeding on hard-shelled organisms, they are particularly equipped to manually handle them. While the packaging problem may be an issue for other predators, octopuses are adept at prying shells apart. They have flexible, bendable, and variable-sized suckers on their arms. These suckers enable them to hold shells open and pull tiny animals out of hiding. They can perform the most delicate of tasks with these suckered tips, such as untying knots of surgical silk (Anderson, Mather, and Wood 83). The suckers on its arms also act as chemical sensors, and provide the animal with information about the object in its clutches. Different kinds of shellfish require different techniques for extraction. Octopuses can bite and drill through shells with their sharp beaks and serrated teeth, but they often inspect and assess the shell's thickness and depth first in order to figure out where and how to drill (Anderson, Mather, and Wood 61-3). Surely it would eventually realize that the camera is an unseemly object, but it is worth noting that octopuses will eat just about any animal that cannot evade them. It is accustomed to strange encounters with unidentifiable kinds. To it, the camera is no different.

It is also possible that the camera took on a decorating or dwelling tone: octopuses often adorn the immediate exterior of their dens with neat piles of empty shells, bones, and rocks (Anderson, Mather, and Wood 71). These middens are sometimes called "gardens" because they are adjacent to the octopus' den, and they appear as a form of ornamentation. However, these leftover shells also serve as protective walls to block the entrance of their dens from intruders (Anderson, Mather, and Wood 67). As Schweid remarks, the common octopus is a domestic creature, a homebody: it "likes nothing better than to find an inviting den, strew some rocks and clam shells in front of it and curl up inside, occasionally coming out in search of food"

(28). Looking for hard-shelled objects is part of its process of making a safe and inviting home for itself.

Whether the camera bears a feeding tone, a decorating tone, or a dwelling tone, or something else entirely, remains unclear. Ultimately, the cause of “octopus steals my video camera” cannot be clarified. Causation, as Graham Harman explains it in *Guerilla Metaphysics*, can only ever be “vicarious” or indirect. The true cause of any action is enacted from a place that exists, but to which we do not have access. What we can know is that vicarious causation is generated by an aesthetic attraction between things, what Harman calls “allure” (245). Allure is a momentary surface communication where some aspect of an object’s reality is glimpsed by another object. Allure can describe what compels an animal to steal a camera. As a term, it is imprecise and opaque; but what allure is, is not as important as what it does. It produces, as Harman explains, a “special and intermittent experience in which the intimate bond between a thing’s unity and its plurality of notes somehow partially disintegrates” (2005: 143). As such, when two phenomena are lured together, a sensual object, “breaks loose from its own qualities;” it becomes defamiliarized, it becomes new (2005: 148).

Animals, Uexküll insists, only see objects that bear markers of significance to them specifically. That the octopus grabs the camera suggests that it was for a moment meaningful to it. This appropriation in turn suggests that the camera has qualities that we have not acknowledged or have simply forgotten. In forcing us to reckon with them, allure can “unleash objects that had been largely muffled in their relations with us, and can translate already recognized objects into more potent form” (Harman 2005: 245). A digital camera is a human-world tool used by humans to record the world for human ends. It has, however, become too comfortably an extension of the human sensorium.

Here, in the sticky arms of an octopus the camera has become productively estranged; it has to be considered something else. Often abstracted and obscured by the process of filmmaking—especially in the process of wildlife imagery—the camera becomes more than a force that mediates and remediates human vision, it is an earthly form, stubbornly material and entangled in the world.

X. Conclusion: Mitigating the Human-World Picture

In “The Age of the World Picture,” Heidegger critiques the proclivity of modern technology to transform the world into an object of and for representation. For him, this transformation is always a reduction wherein the infinite world is made into something finite. This diminishes the world to a scale that humans can comfortably fit into, so that they can put themselves “into the picture...into the scene” (1977: 131). Now in the so-called geological epoch of the Anthropocene—characterized by the rapid and substantive transformation of the earth by technologically-enabled human activities—this process of humanizing the world has seemingly reached fruition. Human interventions are now restructuring ecosystems, speeding up species extinctions, and contributing to serious ecological crises such as climate change. Though all organisms transform their environments, so the Anthropocene-rhetoric goes, the sheer scale and force of our schemes is unprecedented. Humans are significantly determining the appearance and operation of the world, quite literally making the world in our own image.

But Heidegger presumes that in becoming a representation the world is not only fully rendered and reduced but also severed from a larger matrix of meaning. But as I have hoped to have shown, the process of representation is dynamic and dialectical. Accidental animal videos illustrate that the camera reaches out for the world, but it does

not swallow it up and appropriate it. The world and its phenomena are not to be underestimated. Representation is never totalizing or complete, and it is not without struggle. Acknowledging the ways in which these struggles find their way into representation are valuable way to affirm that the images cannot be disentangled from the processes by which they are made.

If the anthropological machine is a human-camera that delivers the world to us in our image, then the value of cinema is its potential to mediate the world to us differently, provisioning an important counter-image to the human-world picture. The camera's automatism is essential to the integrity of this mediation: its non-human remove protects the surprising hybridity of reality from our tendency to familiarize it and put our designs on it. Invitational, it guarantees the intrusion of the unexpected so germane to perceptual transformation. It may not be a panacea for the anthropocentrism that deforms the world, but cinema can certainly intervene to remediate this limited worldview.

Accidental animal videos are a friendly reminder of this, affirming that cinema still has the capacity to bring unfamiliar and unanticipated images to our attention. Images of resistance: proof that there remain aspects of the world that refuse capture, that still slip, maddeningly through our fingers. The world that asserts itself here is crafty and convivial: it pushes back and demands that we awaken from the dream of human mastery.

What these ultimately suggest is that technological modernity is a multispecies affair, and that cinema has the potential to expand the limits of our imagined community. Siegfried Kracauer likened cinema to such an alternative social space. He praised its radical inclusiveness, but he also valued its reflexivity. As Miriam B. Hansen

explains in her introduction to his *Theory of Film: The Redemption of Physical Reality*, cinema for Kracauer “attracted and made visible to itself and society an emerging, heterogenous mass public,” while at the same time, also engaging, at the level of the senses, “the contradictions of modernity” (xi). Accidental animal videos testify to a similar kind of cinematic vernacular, a much more creaturely modernism, an aesthetic matrix where the strange, more-than human sensory-perceptual experiences of modernity are articulated and brought to our attention. Regardless of our strategies of exclusion, animals continue to position themselves as part of the hybrid nature-cultures that comprise the social.

We cannot know why this particular Giant Pacific Octopus stole Victor Huang’s camera. In the end it does not really matter why, only that in taking the camera away, the octopus brought back to the shore of our perception something far more valuable: an artifact from an alien world, where until now, it lay unclaimed like a gift from the tide. What we deem accidental is not extraneous but necessary. It marks the existence of other perspectives, other ways of getting on in the world, and operational processes that exceed our comprehension. These are as essential to the fabric of reality as they are to cinema.

Animals present productive discontinuities at the surface of encounter. This gap is too often mistaken for a void that needs to be filled, or a surface that needs to be plumbed when in fact, it is a space for improvisation, gesticulation, and possibility. Media, as material-sensory-aesthetic interventions can constitute touchstones where we are able to convene and relate to one another in ways that productively challenge our traditional understandings of communication. Not only of cinematic communication, its aesthetic operations and ethical quandaries, but communication as a process more

broadly. They offer opportunities to think about it less as a means to occupy or inhabit the place of others, and instead as a means to cultivate and provision a place for them. Not a sublime idealized place, but a provisionally livable one.

I continue this effort to open up our definition of communication in the next chapter. I examine the practice of staging encounters between non-human apes in zoos and touchscreen tablets, and use this as an occasion to explore the ways in which non-human apes have been and continue to hold our communication imaginary captive. Their similarity to us is both a threat and lure that excites and stokes the modern ideal of communication as a fantasy of lossless exchange and unlimited universal access to the mysterious interiority of others. At the same time, however, captive apes clarify for us the confines of this narrow definition of communication, and encourage us toward a practical understanding of communication as something far more hospitable.

Chapter 3

An Orangutan Plays with an iPad in Paradise: Staging Communication and Offering Accommodation in Captivity

For the human, practically everything can be a mirror.

—Dominic Pettman, from *Human Error: Species Being and Media Machines* (10).

Modern media have altered forever the meaning of anthropomorphism.

—John Durham Peters, from *Speaking into the Air: A History of the Idea of Communication* (228).

The anthropogenic machine...is an optical machine constructed of a series of mirrors in which man, looking at himself, sees his own image always already deformed in the features of an ape.

—Giorgio Agamben, from *The Open: Man and Animal* (26-7).

I. Ape, Meet iPad

A gorilla is pictured, perched on a grassy knoll. Its eyes are cast downwards, transfixed on the iPad screen that it holds at arm's-length. Its left hand is supporting the tablet, while its right hand is touching the screen. The focus of its attention is tantalizingly concealed. The caption reads, "New toy ... intrigued gorilla prods iPad." The image in question appeared in the April 2011 issue of the UK newspaper *The Sun*, alongside an article entitled, "Planet of the Apps." The title playfully alludes to the prolific *Planet of the Apes* franchise, conjuring up for the imagination the boundless potential of non-human ape intelligence. The reference also provokes the excitement of its readers by mobilizing the alluring and well-trod narrative of apes becoming human.

Scientists from the University of Kent, the article reports, are giving iPads to gorillas in zoos as a means of keeping them occupied during their time in captivity (Flynn 2011). It alleges that the gorillas explored a number of different apps, and that they were particularly fond of the game "Angry Birds." Eventually the gorillas became so

enamored with the tablets that they supposedly carried them around protectively “as if they were babies” (Flynn 2011). In the end however, this mimetic enactment proved to be little more than an April Fools’ Day hoax (Morrison and Owen 2012). Nevertheless, the scenario set a stir in Claire Richard, the primary gorilla keeper at the Milwaukee County Zoo, a zealous desire to transform this fantasy into a reality.

Richard shared the story with her friends on Facebook, remarking that she wanted an iPad for Maji, one the zoo’s resident gorillas (Uebelherr 2011). Her Facebook friend Kim Houk, a zoo volunteer, commented that she should get one for Mahal too—the zoo’s youngest and recently acquired orangutan. Scott Engel, an app developer and orangutan enthusiast took the bait, and donated a used iPad. More donations followed (Uebelherr 2011). Only months after the ruse first appeared in *The Sun*, apes at the Milwaukee County Zoo were actually playing with iPads; even drawing pictures using apps like *Doodle Buddy* (Lee 2012). Though initially imagined for gorillas, in the end it was the zoo’s orangutans, Mahal and M.J., who seemed to display more interest in the devices.

Eventually Richard Zimmerman, founder of the non-profit advocacy organization Orangutan Outreach, got involved. He had already been primed: he admitted to being similarly inspired to create such a project while watching Steve Jobs publicly unveil the iPad in January of 2010 (Mathur 2012). “When I saw the close-ups of [Jobs’] fingers on the iPad” he confesses, “I thought to myself—This is perfect for orangutans!” (qtd. in Mathur 2012). And so “Apps for Apes” was born.

In its current manifestation, the project is an enrichment initiative that strives to pair captive orangutans with donated iPads in zoos, while also promoting education about orangutan endangerment, and garnering support for orangutan conservation in

the wild. Since its initial implementation at the Milwaukee County Zoo, it has gained considerable traction. The initiative has partnered up with zoos all across the world, from New Zealand and Mexico, to the United States and Canada, including Ontario's own Toronto Zoo. And, as it has gathered momentum, its three-part mandate has seemingly given way to more ambitious aspirations: most notably to edify orangutans, and make them into tech-savvy, communicative subjects.

Without a doubt, "Apps for Apes" is carried out in the name of love for orangutans. But no matter how deeply felt this love is, it is not immune from epistemological temptations. As this chapter hopes to show, staging encounters between non-human apes and communication technology is a risky venture given the historically entrenched discursive legacy of putting the two together. This history, I argue, has substantially reduced the conditions of possibility for the generation of more creative and tactful encounters.

Compounding the problem is also an impoverished understanding of communication as an ideal of mental communion, and total access to interiority. These factors have limited options for more reciprocally beneficial relations—but they have not removed them altogether. "Apps for Apes" can be read as *applications for apes*—ways of putting apes into operation—for human ends. However, the project can also alternatively be read as *applications for apes*. The initiative has, after all, resulted in a turn toward application design for apes and a consideration of apes as users. This spirit of accommodation creates an opening in the project for a more generous orientation toward non-human apes. It also creates opportunities to reimagine communication as less about human access and the expansion of human consciousness, and more about making provisionally livable worlds together.

II. Apes and Technology: Uncanny Bedfellows

That this serious initiative sprang forth from an offhand joke speaks to the provocative power and imaginative thrill of putting non-human apes and technology together.²⁶ Certainly, the image of a gorilla using—and amusing itself with—an iPad, makes for an indelible vision. Part of its appeal, no doubt, is that it offers a compelling endorsement of the technology—and personal, digital communication devices more generally. It presents what Nicole Shukin calls the irresistible pre-discursive mimesis of the animal body, a recurring trope in the modern imaginary that has become “an iconic analogy of the effective immediacy of technological communication” (141). The iPad, as it is mobilized in the hands of the gorilla, passes itself off as a communication interface so easy and intuitive that even non-human apes can interact with it.

The real power of this fantastical scenario, however, is not the suggestion that non-human apes are able to use personal communication devices. Rather it lies in the promise that non-human apes might constitute viable—that is, intelligent and thus human-like—subjectivities that can be accessed and probed. Humans have a long history of seeking contact with seemingly intelligent others, especially charismatic mega-fauna like great apes. This history has etched a well-worn desire path in the perimeter between species. As such, the human ape is compulsively brought toward the non-human ape in the same way, each time.

The image of a gorilla holding fast to its possessions, for example, is a retread of Koko the signing gorilla’s unforgettable appearances in *National Geographic* over thirty

²⁶ It continues to inspire jokes in the popular press. Coverage of the “Apps for Apes” project persistently plays up the humorous dimension of apes playing with iPads, and behaving like humans. “Apps for Apes” even appeared on an “Enemy Within” segment on *The Colbert Report* (June 16 2012) where Colbert joked that the orangutans were training with iPads to become a new cyber terrorist threat to the U.S.

years ago. The first features her photographing herself with a camera in a mirror. The second, meanwhile, depicts her embracing her pet kitten. These images not only establish that the gorilla has “possessions.” As Donna Haraway notes in her analysis, they are mobilized as evidence that Koko is in possession of something even more significant: a sense of “self.” Koko’s trove of personal effects corroborates that she has a potentially coherent, singular interiority. But this “self,” Haraway postulates, is one clearly “crafted in the political theory and political economy, not to mention the consumer culture, of the modern west” (1989: 146). Her “self” rather than some inevitable manifestation of her essence is instead something wholly manufactured.

This manufacturing of non-human ape subjectivity is not simply a process carried out for its own sake. The purposeful enculturation of non-human apes serves communicative ends. As such, it is instead, part of a nearly century-long commitment to making non-human apes into our own personal interlocutors. This is a relatively recent project, developing out of western, postwar primatology. And yet it is part of an even larger epochal enterprise: the cultural project of modern communication.

The modern western condition, John Durham Peters argues, is characterized by a monomaniacal obsession with communication, wherein any and all encounters between ourselves and strange others are persistently measured against an impossible ideal. This ideal, Peters calls “the dream of perfect communication.” It is a myth of mental communion, whereby knowing what another is thinking is believed to bring mutual understanding and harmony to the world. This ideal, it is believed, can be achieved by simply adding a miracle means into the mix: only the right medium can repair the fundamental chasm between the self and the other.

Communication is constitutive of the modern world, but our understanding of communication is deeply flawed. Communication has its roots in the Latin *communicare*, which means to share or make common. Before the 17th century, this understanding of communication was anchored to matter, to the physical world. After, it became more akin with sharing minds (Peters 77). This goal is, of course, impossible, which only serves to galvanize its allure. The interest in transcending communicative limits has “invited novel adventures of contact with particularly enigmatic others” (Peters 228). Nowhere is this so pronounced as in the modern history of our encounters with non-human apes. Great apes are especially compelling for us, as we will see. But the desire to commune with them is not innocent. Rather it is invested in producing knowledge about human beings, and expanding human self-consciousness.

Though “Apps for Apes” is in many ways a new and unique project, it also re-enacts a familiar and enduring drama. It begins as an enrichment initiative and ends up as a communicative intervention. It betrays a deep-seated desire for shared interiority with inaccessible others. It is tantalized by the potential yield of the elusive minds of non-human apes especially. Likewise, it is emboldened by the new technology of the iPad and its potential to afford such access. Thus it runs the risk of casting non-human apes as insipient human subjects who bear coveted information. Subjects that can be in turn, actuated, made communicative, and accessible through technology. This is the dream of perfect communication: always bypassing the real in favour of the ideal, ultimately instrumentalizing and undermining our relationships with others.

“Apps for Apes” is a project preoccupied with transcending the limits of communicability with regards to a series of vexing obstacles: species difference, the threat of extinction, and the enclosure of the zoo. With its haptic screen interface that

works as a portal to the world's largest communication network, the iPad promises to offer a solution, or at least a diversion, to the problem of contact. And yet, the project fails to do so, thanks in large part to the resistance of the orangutans. As much as "Apps for Apes" is a mythical, discursively inscribed meeting point between non-human apes and communication technology, it is also a real, material meeting that requires willing partners.

Attending to how these physical encounters between orangutans and iPads are designed, carried out, and negotiated puts limits on human entitlement to access. These obstacles are necessary reminders that transcendence, though framed in opposition to solipsism, only ends up reinforcing it. Instead of building bridges, "Apps for Apes" runs the risk of extending the human estate, at the cost of the non-human. These obstacles of contact are essential: they inspire a need for alternative routes, and provide the conditions of possibility for working out new ways of engaging with mysterious others. In continuing to mobilize our efforts toward divining methods to penetrate minds, we shirk the real work of relating and connecting. These moments of resistance serve as a reminder that rather than seek to transcend limits, communication must accept what remains immanent. For a truly tactful engagement, we must make do with what is offered to us, at the surface of encounter.

III. Fictions and Frictions: On the Incompatibility of Orangutans and iPads

Under the auspices of the "Apps for Apes" project, Orangutan Outreach solicits donations of used iPads from the public. The devices are then distributed to interested zoos. Once there, they are deployed for cognitive and creative stimulation,

supplementing the orangutan's preexisting physical enrichment schedules. The project's explicit mandate, according to its website, is threefold: to alleviate boredom in captive orangutans by providing enrichment and gratification. It also aspires to raise awareness about the critical endangerment of orangutans in the wild. And finally, it hopes to promote and rally support for Orangutan Outreach's own conservation and rehabilitation efforts in Indonesia and Malaysia where the world's dwindling native orangutan populations currently reside.



Fig. 3.1: Doctored photo of orangutan holding an iPad serves as “Apps for Apes” promotional image. Photo by Scott Engel. Source: Orangutan Outreach.

At first glance, “Apps for Apes” appears fairly straightforward: iPads are transposed from human hands into those of orangutans. The project's primary promotional photo (see Fig. 3.1) seems to confirm this effortless exchange. It depicts a young orangutan in its enclosure, sitting with an iPad propped up with its hands and feet. But upon closer examination, the iPad appears peculiar: its corners are much too pointy, its size too large and unseemly. As it turns out, the photo has been altered. To be

fair, Orangutan Outreach does not try to hide this fact. On its site, the image is accompanied by the footnote: “Photo has been modified. The orangutans are not yet holding the iPads due to safety concerns.” However, whenever the image appears elsewhere in the popular press, this annotation is suspiciously missing, which serves to downplay, and even conceal the fact that orangutans do not actually handle the iPads directly, or on their own.

Today’s touchscreens may be made of strong, damage resistant Corning® Gorilla® Glass (See Pogue 2010) but iPads are still far too delicate for the unwieldy touch of orangutans. Not only can they harm the iPads, the iPads can harm them: the devices contain hazardous metals, which could cause serious injury if ingested (Mathur 2012). As a result, the orangutans’ sessions with the iPad are short, intermittent, indirect, and always supervised. Humans hold the iPads toward the orangutans from outside their enclosures. Some orangutans look at the screens through glass windows. Others are able to touch them, but only by reaching through the spaces between the wires or bars of their holding pens. In addition, orangutans have to be taught to touch the screen with their fingers. Many try to use external implements like sticks, or other body parts like toes, lips or tongues (Fernandez-Blance 2012; Berridge 2014). Even then, the orangutans still have fingernails that curl over the tips of their fingers, preventing them from using the touchscreen properly (Fernandez-Blance 2012). Zookeepers have to hold the iPads at the right angle in order to account for this.

iPad use is meant to be strictly voluntary. However, there are instances where zookeepers offer incentives to the apes, in the form of food rewards, to encourage them to play with iPads, or play with them in certain ways. Such conditioning is, of course, against the elective, non-utilitarian spirit of play. On occasions where the orangutans do

display an interest, they also have additional choices to play with whichever apps they enjoy. “If they’re engaged in an app, we’ll keep going,” Erin Stromberg, an orangutan keeper at the Smithsonian National Zoological Park explains, “If not, they have the choice to walk away” (qtd. in “National Zoo Orangutans” 2013). And they often do. Many of them are simply not interested in interacting with the devices at all. As Matthew Berridge, an orangutan keeper at the Toronto Zoo notes, the orangutans in his care “would rather do most other enrichments over using the iPad” (2014).

These realities of orangutan-iPad interaction are persistently underreported in the promotion of “Apps for Apes.” Instead, there is much more interest in the project’s ever-expanding promissory horizon. While the reach of any new venture is bound to exceed its grasp, “Apps for Apes” is especially prone. As the opening anecdote indicates, the project was borne of—and continues to be mobilized by—the human desire to see non-human apes using and enjoying personal communication devices. While the particularities of the project—orangutans, iPads, zoos—may be relatively new, putting captive apes and technology together is not.²⁷

In fact, psychologist Robert Yerkes, who founded the very first primate research laboratory in the United States, wrote almost a full century ago that, “The greatest possibility of improvement in our provision for captive primates lies in the invention and installation of apparatus which can be used for play and work” (1925: 229). As this

²⁷ Willie Smits was using touchscreen play with captive orangutans at the Appenheul Zoo in the Netherlands as early as 2006. These efforts inspired Hanna Wirman’s more recent orangutan gameplay design project, TOUCH (Bringing new Technology to Orangutans for Understanding and Communicating cross-species for greater Harmony) based out of Hong Kong’s Polytechnic University (2014). Meanwhile touchscreens have been used substantially with bonobos in the work at the Great Ape Trust, which has combined lexigrams (also called “Yerkish”) with the touchscreen to facilitate bonobos enrichment and communication.

proclamation indicates, technological intervention has long been imagined as a way to remediate the question of non-human primate life in captivity. However, what is significant about “Apps for Apes” is that it is not merely interested in remediation; it has much grander aspirations.

IV. Great Ape Expectations: Enrichment, Edification, and Communication

As aforementioned, the project promotes an explicit tripartite mandate—implementing orangutan enrichment, increasing public education about orangutan endangerment, and cultivating economic support for conservation. However, it also appears to hold additional, tacit commitments. At times, for example, the project aspires to edify the orangutans. There is a sense that the orangutans are already similar to humans: they bear an incipient intelligence that simply needs the proper techniques and technologies in order to be cultivated. Turning orangutans into tech-savvy subjects serves a greater purpose, however: that is to turn them into communicative partners. Hovering around “Apps for Apes” is an assumption that orangutans contain rich interior lives that are just waiting to be accessed and articulated by the right means. And iPads appear here as miracle tools to facilitate this intra- and inter-species communication. They crystallize audio, visual and haptic modalities with additional qualities of portability, network accessibility, and commercial availability, which make it a viable option for such interventions.

“Apps for Apes” began as an enrichment initiative. Since it has gained momentum, however, it has become additionally interested in the communicative potential of putting iPads and orangutans together—regardless of their incompatibility.

As Zimmerman explains, the initial phase of the project was to get the iPads into zoos. The second phase, meanwhile, was to implement wi-fi. The hope was that orangutans at different zoos might be able to communicate with each other via Skype or Facetime. As Zimmerman reveals, the expectation is that orangutans will go online and contact other orangutans in order play for what he calls “Primate Playdate” (Crecente 2011).

These video chats could possibly reconnect orangutans with other orangutan friends or family who have been transferred to other zoos. Such interactions may potentially even serve a practical function with regards to captive breeding. Orangutans have to move between zoos for mating; “meeting” online first may help set the groundwork for better relationships. It might also allow for human-orangutan communication. As Linda Jacobs, a trainer working with orangutans explains, the iPad gives the orangutans “a way of letting us know what they know, what they’re capable of and what they’d like to have” (Waugh 2012).

To a certain extent, this shifting promissory horizon is to be expected: as a pilot project, “Apps for Apes” is unfinished and is still in its early stages of development. Not only that, it is animated and made meaningful by a wide-variety of actors: reporters, zookeepers, zoo volunteers, zoo representatives, zoo visitors, the general public, conservation activists like Zimmermann, as well as the orangutans themselves. These participants promote a wide-spectrum of priorities and interests and bring different interpretations to the project, which do not all necessarily align. That it is implemented in geographically disparate zoo environments across the world with diverse institutional, local and national contexts only compounds this ambiguity.

“Apps for Apes” is not a coherently articulated unified initiative by any means. However, the fact that it began for the purposes of enrichment, and ended up concerned

with communication is worth a closer examination. The shift toward communication is a familiar one—the history of primate research follows a similar trajectory. As such it seems innocuous, and inevitable. It is as though working with apes not only leads to a curiosity to know more about them, but also a desire to commune with them. After living with orangutans in the field for years, for example, primatologist Biruté Galdikas decided to bring someone in to teach sign language to one of her rehabilitant orangutans, Sugito. Her reasoning was that, while she had always enjoyed her time with Sugito, she had regretted the fact that she was never able to “talk” to him. Sign language presented an opportunity to finally examine “how he perceived and interpreted the world” (qtd. in Haraway 1989: 141).

The desire to turn encounters with apes into explicitly communicative ones may appear to be an eventuality, but it is discursively wrought. The trajectory is steered by pervasive myths about non-human apes on the one hand, and a misunderstanding of communication on the other. Non-human apes are subject to a distortive and disproportionate amount of cultural fascination. The animal’s rich symbolic heritage as mirror image and reflection of humans, or as window into human nature suggests that its allure stems largely from its similarity to us. This similarity is not unfounded. Non-human apes have an outward humanoid appearance, and there are many overlaps in morphology, physiology, behavior, and DNA. But the discipline of primatology also plays a substantial role in the production of this anthropomorphic figure of the ape, as object of knowledge and potential interlocutor.

The work of primatology is carried out across a number of fields. Regardless of from where its inquiry begins, its central concern is to produce knowledge about primates. And “primate” is not just any taxonomic order of mammals; significantly, it is

also the one that includes humans. As a method of inquiry, then, it is interested in non-human primates—but only insofar as these animals can expand knowledge about human primates. Non-human primates are used as a basis for comparison and contrast, models we use to learn more about ourselves, assert our place in an expanding network of relations, and affirm our own narratives about origins and futures. Consequently, in the cultural imaginary non-human primates have been consistently mobilized as portals to human evolutionary history and as natural, pre-cultural humans. Exposing non-human apes to our technologies has been part of a strategy to make them more like us, so we can understand the processes by which we ourselves transitioned from nature to culture.

While primate research is hardly a new endeavor, primatology as a discipline is a relatively recent science. It appeared just before the middle of the 20th century, and its emergence also marked a turn in primate research toward communication. Therefore, in addition to situating non-human apes as objects of knowledge, primatology began to position them as subjects who might potentially communicate that knowledge. Haraway identifies this preoccupation as concomitant with the postwar turn toward cybernetics and information theory. The interest in systems of communication and control, she maintains, guided primate research away from tangibles such as ape physiology. Instead it moved toward ape interiority and intentionality, and focused on how such motivations were translated into sociality, interaction, and meaningful coordinated and effective action. In this regard, the desire to communicate with apes was borne less from a desire to build mutually beneficial relationships, and more from a desire to access knowledge for its potential application to human society. It was a means to learn more about alternative and more effective methods of governance, management, and control of populations in the wake of postwar instability.

This marked interest in ape motivation and behavior and the articulation and dissemination of information, led to the development of methods to externalize ape interiority. In light of this, this shift becomes more than just a symptom of the cybernetic turn: it is also a consequence of the more sprawling project of modern communication. The notion that with the right techniques and technology, minds can meet and mend the physical rift between them is characteristic of the modern rhetoric of communication. As Peters ascertains, this project is characterized by an imperative to frame all encounters with strangers as communicative ones. It also holds these communicative efforts to an ideal of lossless exchange and unlimited universal access to the mysterious interiority of others.

It is not a coincidence that primatology gained a foothold as a serious discipline in tandem with the establishment of modern communications. As Peters points out, the postwar obsession with “communication” was burnished by two complementary discourses, one technical, the other, therapeutic (28). The development of information theory framed communication as a purely technical process, one that reduced the process to the equal and effortless exchange of information. The therapeutic one, meanwhile, situated communication as at once a panacea and a patsy for modern alienation. These discourses are but two sides of the same coin, however; both see the solutions to the problems of communication as a matter of better technologies or better techniques (Peters 29).

“Apps for Apes,” whether it means to or not, emerges in the mire of this cultural legacy. It is braced by fantasies of apes as intelligent almost-humans. They are keepers of human secrets: all that is required are the right tools and techniques to unlock them. As the orangutan keeper Linda Jacobs claims, these animals, “have the intelligence they

need to communicate, but they don't have the right equipment" (qtd. in Waugh 2012). The iPad appears as a potential equalizer between human and non-human apes that can facilitate the exchange of information, and bridge the frustrating chasm between species. However, in building a bridge, humans end up merely expanding human territory. For the search for intelligence in non-human animals is, as Erica Fudge notes, inextricable from an assertion of human exceptionalism, power, and dominion (2002b: 116). In this search we do not encounter animals as mysterious strangers, but as potential humans. We want to commune with non-humans, but we attempt to do so by first making them more like us.

By staging encounters between some of the oldest of the great apes and the newest of the personal, mobile, smart devices, "Apps for Apes" taps into a rich symbolic economy wherein the origins of human sociality meet its future. In this alluring fantasy, the orangutans' receptive hands embrace the iPad, and in so doing welcome and affirm human being. It is dictated by many of the same anthropocentric imperatives that have and continue to underlie how we imagine and engage with non-human apes.

V. Making Concessions

It is tempting, given this institutional-discursive context, to take a cynical and contemptuous stance toward "Apps for Apes." The project can easily be interpreted as *applications* for apes—ways of putting apes into operation. After all, the orangutans involved in this project are displaced from their natural habitats, living in places that are not of their own choosing, and subject to invasive management within the biopolitics of animal conservation and zoological display. Nowhere are the machinations of Michel Foucault's biopower so explicit than in the apparatuses of conservation and captive

breeding where endangered animals are forcibly made to live. They are subject to routinized activities, extensive surveillance, physical exams, injections, and blood tests, all the while their wild counterparts are being let die in their native habitats.

Bornean orangutans are endangered, while Sumatran orangutans are critically so. Poaching and the illegal pet trade are significant contributors to diminishing orangutan populations, but deforestation and habitat destruction are the largest factors, in combination with the irresponsible and unsustainable practices of oil palm monocultures (see for example Husson, Wich, Marshall et al. 2009: 77-96). The market for palm oil is expansive: not only is it a popular biofuel, it is a ubiquitous ingredient in countless foods and cosmetics, as well as cleaning agents such as washing detergents and toothpaste. Providing a home for a vulnerable population with disappearing habitats, the zoo emerges as a common—though not only—alternative home for them.²⁸

“Apps for Apes” raises awareness about the plight of orangutans in the wild, but it also promotes and validates the institution of the zoo. It reiterates the zoo’s commitments to education, protection, and conservation, but also increases its financial viability. Putting orangutans and iPads together generates exactly the kind of novelty and spectacle that encourages visitors to go to the zoo. Zoos are susceptible to market pressures. Their continued existence depends on the revenue generated from visitor admissions. In this regard, zoo participation in “Apps for Apes” might be read as more opportunistic than altruistic. It can be interpreted as a kind of neoliberal maneuvering, a way to make the physical scarcity of orangutans, and the charisma of their affective responses, productive.

²⁸ Displaced orangutans also end up in parks and others protected areas, sanctuaries, rehabilitation centres, and research facilities, as well as human homes thanks to the illegal pet trade.

In addition, the notion of orangutans using iPads, not just for fun but also for edification and communication, encourages visitors to imagine new ways of interacting with orangutans. After all, animals in zoos are only available to the visitors' gaze. While petting zoos create opportunities for visitors to directly touch animals, these are typically limited to domesticated species like goats, llamas, and sheep. Contact with most wild species, meanwhile, is actively avoided to ensure the wellbeing and safety of both animals and humans. This separation is often a major source of dissatisfaction in zoos, and technology often emerges as a way to address this gap, creating opportunities for alternative kinds of interaction (Perdue, Clay, Gaalema et al. 2011; Perdue, Clay, Gaalema et al. 2012). iPads enter the zoo in this capacity, tantalizing visitors with the promise of getting more intimately "in touch" with orangutans.

As Shukin makes clear in *Animal Capital: Rendering Life in Biopolitical Times*, capitalism has a long and treacherous history of putting animals to work for their "ostensibly innate capacity for a sympathetic, even telepathic, communication of affect" (132). Their bodies have been used to dramatize, naturalize, and legitimize the way in which industrial capitalism has transformed the experiences and textures of everyday life. They have also been used to conceal larger violent and destructive political economies. By playing on Apple's well-worn slogan, "There's an App for that," "Apps for Apes" could be called out for aligning itself with such a strategy, mobilizing animal affect as an alibi for any number of transgressions.²⁹ Given the troubled history of apes being

²⁹ And there are many. In an added layer of irony, bonobos and lowland gorillas, among other wildlife, are suffering from the unintended effects of mining for precious metals used in tablets. The Democratic Republic of the Congo produces the majority of the world's Coltan, short for *Columbium-tantalum*, which is a black tar-like mineral that is a primary ingredient in touchscreen tablets and smartphones (see Redmond 2001).

brought into human culture as objects of fascination (e.g., the story of Nim Chimpsky in Hess 2008), knowledge, and entertainment it can be argued that the orangutan participants in the “Apps for Apes” project are unwitting and passive victims of human whims.

The tragic fate of the Milwaukee County Zoo’s young orangutan Mahal, the first orangutan to participate in the “Apps for Apes” project, suggests as much. Mahal died in 2012. It was discovered in 2014 that he succumbed to a rare parasite (Devitt 2014). His premature death was accidental, but at the same time, such occurrences are not uncommon in a zoo. Animals die in captivity all the time for a whole host of reasons, many of which are indirect outcomes of the very machinations of captivity itself (see Kemmerer 2010). Mahal is also featured prominently in the project’s primary promotional image. In this way, his death casts a pall over “Apes for Apes.” It serves as a reminder that while giving iPads to apes is amusing, it might equally be read as a wholly inappropriate and ineffectual offering that does little to transform or improve the real living conditions of orangutans.

These concerns about the project’s ethical commitments are not altogether unwarranted. However, interpreting “Apps for Apes” as a case where dominant humans exploit passive orangutans runs the risk of oversimplifying what happens in these encounters. Such a stance vilifies humans, and is at odds with the genuine affection and compassion those involved with the project extend toward their keep. It also does a further disservice to the orangutans themselves by making them inert, passive objects of pity. Orangutans are no doubt tangled up in the thicket of various oppressive discursive, symbolic, and material systems. But as the work of Jakob von Uexküll has illustrated,

animals do not simply live in their environments, they make them just as much as they are made by them.

VI. iPads in the Zoo, or *Technē* in Paradise

In June of 2009, the artists Christoph Steinbrener and Rainer Dempf debuted a provocative temporary public installation at the Schönbrunn Zoo in Vienna, Austria entitled, *Trouble in Paradise*. The installation sought to create “frictional spaces” within the zoo by placing various human made objects into select animal enclosures: “a railroad track in the bison pen, a tub next to the crocodile, a wrecked car at the rhinos’, an oil pump in the penguin basin, a drum of toxic waste in the aquarium, and a log cabin covered with snow in the elephant park” (2009).

The aesthetic incongruity inspired by the introduction of these decidedly artificial objects reveals the existence of the paradisiacal fantasy of untouched nature that materializes within the traditional zoological display. The intervention disrupts the pleasure of the antediluvian reverie, and refocuses the zoo visitors’ attention instead on the actual relationships between human worlds and those of animals. Despite efforts to maintain an ontological separation between natural and cultural worlds, they already overlap. For the animals living here, there is no ontological distinction between the cultural and the natural components of its environment. They all equally constitute the mesh of matter that constitutes its home.

The zoo, Matthew Chrulew observes, “is an apparatus for the production of paradise” (2011). The zoo presents itself as an idyll where animals are protected; they are free from predation, starvation, and inclement weather. They insist, as all paradises do, on partitions, elaborate fortifications, and safe distances. At the same time, Chrulew

contends, the limited space, the systematic, and routinized nature of the animals' daily lives, and ubiquitous surveillance leave little room for aleatory events and stimulating encounters. This excess of leisure time, idleness, and boredom in Chrulew's estimation, prevent the zoo from being truly paradisiacal. But these qualities are, in fact, part and parcel of the very definition of paradise.

Paradise is first and foremost, a conceptual ideal. It is a paragon of place that prescribes a proper, and perfectly calibrated relationship between nature and culture, human and animal (McClung 2). Throughout history, William McClung argues, it has largely been imagined in the dueling architectural metaphors of arcadia and utopia. That is, as an untouched and harmonious wilderness, on the one hand, and as a walled garden, protected, and designed to perfection, on the other (2).³⁰ The former nostalgically recalls the original Eden before the proverbial fall. The latter is a desperate fantasy of a world to come, envisioned from the bow of Noah's Ark. The two interpretations are not mutually exclusive, but what is most significant about them is that both are equally untenable. Paradise is alluring, but in practice it is resolutely banal and unsustainable.

Even Adam and Eve, humanity's mythological progenitors, were bored in Paradise. As Lars Svendsen notes in *A Philosophy of Boredom*, a number of philosophers from Immanuel Kant, to Alberto Moravia and Robert Nisbet, have speculated that it was the very idleness and tedium of Eden that prompted their fall in the first place (Svendsen 20-1). In this case, their banishment by God becomes an act of

³⁰ While the Eden of Genesis has often been conceptualized as a walled garden, McClung insists it was actually an unenclosed one. After all, it was its lack of protective enclosure that made it vulnerable to incursion by Satan in the form of the serpent. McClung suggests it only became enclosed after the Fall in order to keep Adam and Eve out (3).

mercy, a means of rescuing humanity from a fate of relentless monotony. The zoo, then, is an apparatus for the production of paradise, and is equally an apparatus for the production of boredom. The animals have nothing to do. They are not given occasion to make their surrounding worlds, because they are already made by humans.

Though they materialize in any number of ways, in whatever form zoos take, their architecture ends up suggesting more about human beings than it does about the animals therein. They make manifest attitudes about humanity's desired relationship to the natural world. As such, any changes to the zoo throughout history can be understood as symptomatic of the ways the relationships between nature and culture get reimagined during the transformative processes of modernity. As highly cultivated places, they enact vexed and often contradictory relationships between human beings, nature, and technology.

While the tradition of animal display has a long and varied history, the zoological garden is a relatively recent phenomenon. Before zoos, exhibiting animals took the form of royal or private menageries and crude traveling shows. This way of exhibiting animals was primarily concerned with flaunting the power, prestige, and wealth of the collectors (Rothsfels 19). They explicitly promoted human dominance over the natural world, a project that was often inscribed along lines of colonial power. Animals were appreciated as accumulated objects, symbols of conquest—and sometimes humans were too.³¹ As public collections, zoos marked a departure from this tradition, but were no means divorced from it. Paris' Le Jardin des Plantes in 1793, the first zoological garden, displayed animals in barren, iron-barred cages. Early zoos, like the menageries before

³¹ See Nigel Rothsfels' *Savages and Beasts: The Birth of the Modern Zoo* (44-80) for a lengthy discussion of this violent dimension, including a history of exhibiting humans in zoos.

them, were equally entrenched in colonial exploitation, injury, and death on massive scales—of both animals and humans. As the strategies and aesthetics of public display grew more complex, this violent dimension of zoological gardens was creatively veiled. Eventually, zoos actively separated themselves from the menageries by promoting scientific, educational, and moral advancement (Braverman 26).

The zoo became an enclave, a protected pocket of nature situated in the middle of the human metropolis. As new and improved Edens, zoos were places “where the cruelty of nature was abolished and peace reigned under the benign influence of culture” (Baratay and Hardouin-Fugier 195). They offered an edifying salve for the shocks brought on by modernity’s transformation of everyday life. It is no surprise that zoos emerged at the end of the 18th century, just as definitions of nature were being reshaped by new industries and techniques.

The shift from menageries to zoos also marked a shift away from exhibiting animals as displaced objects, and more as emplaced creatures. They still situated animals as the focal points of their exhibits, but unlike menageries, they became much more concerned with displaying animals as situated in natural spaces. Particularly after the reforms of “The Hagenbeck Revolution” instituted by German animal merchant, Carl Hagenback, near the end of the 19th century. Zoo designers and keepers became more concerned with the appearance of animal environments. Enclosures were designed to appear less like cages, and more like the animals’ native habitats. These immersion displays became increasingly popular—and remain so today—because they concealed evidence of captivity, and offered instead more realistic replicas of “nature” (Rothfels 202). This naturalism was less for the sake of the animals, however, and more for the human visitors who wished to see animals as if they were in the wild. As such, zoos

became places where human visitors could find peace and pastoral tranquility from the unnatural trappings of the urban surround.

The privileging of the experience of the human spectators over that of the animals took its toll, leading to visibly stressed-out animals, high mortality rates, and unsuccessful breeding. What followed was the less well-known “Hediger Revolution,” sparked by Heini Hediger, a Swiss animal biologist in the mid-20th century (Chrulew 2011). Hediger proposed enclosures and techniques that were more functional for animal care, serving primarily the needs of the animals. While the two reforms identified with Hagenback and Hediger suggest a kind of teleological evolution, they do not mark one. Rather, the central conflict between aesthetics for humans and ergonomics for animals remains to this day, unresolved. Modern zoos tend to offer some combination of naturalism and functionalism, to varying degrees of success and failure.

Regardless, both approaches depend on technologies and techniques for their implementation; naturalism especially. Naturalism may be desired, but it is an idealized and highly contrived aesthetic. Because it is not functional, it does not foster the kinds of novelty required to excite the interest of humans or animals. While incorporating technological mediation in zoos may appear unseemly and inconsistent with the aesthetics of naturalism, many zoos have and continue to rely on it, to varying scales of conspicuousness. It is used to create aleatory events and novelties in order to augment human—and to a lesser extent, animal—experience. As Burt notes, in the early 20th century, music was sometimes played for animals in zoos, either in live performances, or over gramophones. Films were also shown in their enclosures. At the London Zoo in 1932, *Congorilla* (dir. Osa Johnson) was projected onto the wall of the enclosure of the

zoo's resident gorilla's Mok and Moina (Burt 2002: 270, 290n). Such interventions stimulated the animals, and also generated visitor interest in the exhibits.

Read another way, such technological interventions are also a means by which humans can sublimate their inability to experience direct contact with the animals. Animal exhibition in zoos is guided by "immersion design," which in addition to showing animals in naturalistic settings encourages the human visitors to feel immersed in nature (Braverman 33). This is no easy task, since direct, physical contact between zoo animals and human visitors is actively prevented. As Irus Braverman notes, "Fences, moats, cages, and separate air and water systems ensure that animals and humans cannot touch one another" (71). Zoos may seduce human visitors with promises of seeing animals and encountering and engaging with them, but they are not able to follow through on this promise, and often frustrate the desire even more.³²

Zoos purport to be places where people can go to see, and have meaningful encounters with animals, to connect with nature. However, the structural limitations of the zoo inhibit the possibility of direct connection. Contact is actively prevented, through architecture and aesthetics. At the zoo, people can only look at animals, which is ultimately unsatisfying. As many critics of the zoo insist, the human gaze, significantly reduces the zoo animal, to the point where it is no longer "real." A giraffe in a zoo is not a real giraffe, Randy Malamud complains, rather it is "a cultural stylization of a giraffe; a (stinted) representation" (1998: 29).

Such statements echo Berger's declaration that, even though zoos are full of live animals, nowhere can a human truly meet one. For captive animals, he insists, "have

³² Emily Vey Duke and Cooper Battersby explore this frustrated intimacy in their experimental short film, *Beauty Plus Pity* (2009), where a hunter confesses that he fantasizes about a zoo where all the animals are sedated and able to roam freely, thus allowing humans to finally touch them.

been immunised to encounter” (26). Chrulew reiterates this, insisting that zoo animals live a “wounded life, robbed of vital connectivities and expressions” (2011). Zoos are disappointing, then, because people do not just want to *see* animals, they want to have meaningful encounters with them. And if they cannot interact with them directly, they want to see them interacting with other animals and their environments, engaging with and responding to its textures and objects, its fellow cohabitants, transforming and being transformed by its surroundings.

The fact that contact with animals at the zoo is so elusive has long been a source of contention for many zoo critics who claim that zoos take from animals their ability to avoid or engage others of their own volition. The implication is that the partitions that separate humans from animals inhibit contact and communication by stifling the conditions necessary for contingency. Zoos appear to reduce and constrain the possibilities for communicative and transformative encounters. Thus, introducing communication media makes sense; the iPad especially, since it summons the modality of touch, which is notably missing from zoo visitors’ experience. “Apps for Apes” was born of a desire to see apes touch the screen, and is motored by the myth that they do in fact touch them. Touch in “Apps for Apes” becomes a kind of assurance of the orangutans’ ability for and openness to connection, and the possibility that they may become accessible to us by entering into the virtual sublime of our treasured communication network.

VII. The Touchscreen and the Tangibility of the Communication Sublime

Watching an ape slide its finger across an iPad screen to select its meal shows us just how close we are to our genetic cousins, and how intuitive the technology has become.

—William Wolfe-Wylie, from “Toronto Team helping Orangutans Communicate with People” (2013)

Touch is no cure for communication trouble: it is more primal, but equally intractable

—John Durham Peters, from *Speaking into the Air* (270)

In 2009, rumours of Apple’s plan to release its first computer tablet set astir an air of anticipation. This was only heightened by speculations about the failing health of the company’s co-founder, then chairman and CEO, Steve Jobs. The official announcement was made by Jobs himself during a keynote address in San Francisco on January 27, 2010. He gave a persuasive sermon about the magical, new-fangled device, looking frail and gaunt under the glow of the apple logo projected overhead. The now iconic partially eaten apple logo provocatively alludes to that transgression that precipitated Adam’s and Eve’s expulsion from Eden. Apple celebrates this fall from grace as the pivotal moment when humans transitioned from the world of nature that was given to them, to the world that they could make themselves. Apple’s success is owed to this primeval seduction and it produces a powerful symbolic foundation from which the iPad emerges.

Jobs described the iPad as a third category of device that would fill the gap between laptops and smartphones; it was the final piece that would complete the holy trinity of mobile media. While the iPad supposedly exceeded its predecessors in a number of ways, its most significant achievement he alleged, was that it not only made the web more visible, but tangible. “To see the whole web page is phenomenal,” he

proclaimed. But even better, is to be, “right there, holding the Internet in your hands” (“iPad introduction 27 Jan 2010”). Touching and manipulating the web with one’s hands pretends to offer more satisfying access to the world’s largest communication network.

The triumph of the iPad is partly an outcome of its capabilities and functionality, but it is equally reified by its cultural capital and the symbolic economy in which it is animated. It amplifies the tantalizing discourse of touch that Apple had previously introduced with the iPhone.³³ While screens have always been touchable, they have only recently become receptive and responsive—and ubiquitous, thanks to the iPhone. The first touchscreens were introduced in the 1960s by the British Royal Radar Establishment for flight control purposes, and were gradually implemented for commercial use such as point-of-sale terminals and kiosk displays (Kaerlein 177). When the iPhone appeared, it offered new possibilities for using the touchscreen interface because it was able to interpret multiple input signals, simultaneously, making it plausible to have a whole host of interaction variants (Kaerlein 177-8).³⁴ Apple’s touchscreen technology has since been incorporated into a myriad of related devices.

Touchability is associated with physicality, materiality, and accessibility; it is mobilized in the context of the iPad as a counterpoint to the immateriality,

³³ The very first iPhone advertisement features its illuminated screen casting light into a dark surround, and a finger reaching in to make physical contact with it. The image is accompanied by the tagline “Touching is believing” which as Brett T. Robinson points out, “evokes the biblical account of the apostle Thomas, who refused to believe Christ had risen from the dead until he could touch the wounds of Jesus’ crucifixion” (2013). This image assures the message that, “seeing the new object is not sufficient; the intimacy of touch is required to consummate the highly anticipated union between consumer and object of desire. At the literal level, the ad poses an equivalency between the sense of touch and the act of knowing” (Robinson 2013).

³⁴ In a curious case of serendipity, the touchscreen of the iPhone—and the majority of mobile devices manufactured since—are made using a tough, durable surface called “Gorilla Glass,” manufacture by Corning. David Pogue from *The New York Times* refers to it as “the smartphone’s unsung hero” (2010).

insubstantiality, and uncertainty of virtual space. This juxtaposition imbues the iPad with a seductive and miraculous dimension: it allows users to touch what is untouchable. As Timo Kaerlein observes in his meditation on the promises and perils of the touchscreen:

In a world of cloud computing, Big data, constant algorithmic interpretation of behaviour, and hardware that operates on the nano scale, the touchscreen suggests tangibility where there is little to none—simultaneously doing so on a physical level by providing a reactive service that is palpable in a literal sense, and in the metaphorical way of purporting cognitive tangibility. (178)

The touchscreen tablet materializes the perceived immateriality of modern digital communication: it is an assurance of presence, and of a presence that can be seized.

“Not since Moses came down from on high with those commandments has a tablet generated so much interest,” Jim Goldman, then a technology correspondent for CNBC, observed (2010). Goldman’s cursory observation was not the only one to draw comparisons between Apple’s computer tablets and the Biblical stone ones. A popular Internet meme emerged around the same time. Using images from the film *Ten Commandments* (Cecil B. DeMille, 1956) it pictured Charlton Heston (or sometimes Steve Jobs) as Moses genuflecting with two iPad tablets in his arms. While such biblical allusions are made in jest, they nevertheless speak to the device’s mythic underpinnings.

The allusion to the original stone tablets becomes more than a matter of formal symmetry, it is also a matter of symbolic resonance. Since God cannot take material form, he engraves the stony surface of the tablets with his touch instead. The tablets are meant to be simultaneously a substitute for his presence, a testament not simply to his existence, but his communicability. For Peters the tablets mark a mythic foreshadowing. They anticipate the challenge of modern communication: the conundrum of “how to

conjure the credible presence of an absent body for an audience remote in time, space, or degree” (71). All communication media strive to extend human interaction across space-time, Peters notes, and aspire to approximate contact without touch (228). Touch is perceived to be the starting point of communication: all communicative acts gesture toward this site of mutual contact. It is this desire for physical contact to which the iPad offers itself up.

As much as communication has taken on a variety of meanings throughout history, before technological modernity, it typically referred to a kind of physical transfer or transmission. It was only after the development of communication media that the concept came to mean a significant, quasi-physical process that transpires between people, or subjects, in the shadow of seemingly extraordinary obstacles (Peters 5). Communicative acts were framed as all-or-nothing endeavours: bridges or chasms, successes or failures. Because communication media enabled aspects of bodies—sounds and sights—to be experienced without actually being co-present with them, they implied a kind of bodily transcendence. Media seemingly made something interior, inaccessible, and inextricable from the body, finally external, accessible, and freely circulated.

Exhilarated by this perceived transcendence of limits, humans became preoccupied with identifying new communicative limits in order to surpass them. As Peters notes, modern communication sought to commune with those who appeared incommunicable: not just the distant and the dead, but non-humans such as computers, aliens, and animals. Communication became a provocation, a problem to be solved. It was “the ultimate border crossing concept” Peters remarks, “traversing the bounds of species, machines, even divinity” (228). The pursuit of connection became a grander quest: it was not to just a matter of getting “in touch” with the other, but to achieve a

kind of oceanic wholeness, what Imar de Vries calls, “the communication sublime” (17-18). That is, to inhabit a consummate and universally accessible communication space where information flows without impediment, and the partition of self and other dissolves.

With its insistence on direct contact with the Internet, the tangibility of information, and the invisibility of the interface, the iPad appears as an enticing portal to the communication sublime. It promises to reinstate touch, the materiality and embodiment that are presumed to be missing from communication. It fulfills a need for a burden of proof, a physical trace that affirms that communication has indeed taken place. The modality of touch connects to a more deeply seated desire for contact, borne of our self-inflicted cosmic alienation. The iPad is but another new medium that promises to fulfill the fantasy of perfect communication with its pretense to connectivity, immediacy, and intimacy at a distance.

“Apps for Apes” is in the thrall of the iPad; it is emboldened by its potential to bring orangutans into the communication sublime. This gesture is not exactly sudden. The touchscreen has been used in communicative interventions with other great apes, and other animals like dolphins (see Foresman 2010). It has also been used effectively in interventions with non-verbal humans, such as those with autism (see Kagohara et al. 2013). But again, there are practical considerations for using the iPad as well. iPads are affordable, portable, and commercially available. These characteristics, in addition to their haptic visuality, make them ideal tools for non-verbal interactions. The existence of “Apps for Apes” is made possible by the iPad’s qualities, which make them, at least in theory, amenable to non-human apes, and orangutans especially.

Putting apes and iPads together is motivated by a historically situated desire to commune with non-human apes. While humans have a long history of seeking out new frontiers of contact, they not pursue contact with just any mysterious other. As Peters notes, “Determining the range of creatures we will communicate with is a political question, perhaps *the* political question” (230, emphasis in original). Deciding who to pursue as interlocutors, and who gets invited into the privileged circle of communication is hardly an innocent choice. It means deciding who matters and why, and to what end. That “Apps for Apes” has selected to transform non-human apes—and orangutans specifically—into communicative partners is not arbitrary. Non-human apes are especially alluring for us because we have placed them in the cradle of human being and knowing.

VIII. Apes and Origins: “The Kin Who Never Left the Garden of Eden”

“The secrets of the animal’s likeness and unlikeness from man” are, according to John Berger, “about animals as an intercession between man and his origin” (4). And apes, more than any other animal, are consistently summoned as such intercessions. They are the yardsticks against which human being is measured. Human cultural history is permeated by the figure of the ape as a human stand-in. Throughout Western history especially, John Sorenson notes, apes tend to figure “as ugly cousins, miniatures, inferiors, impostors or indicators of our primal selves, often brutal or witless” (92).

This could easily be a matter of our canny morphological resemblance. Even Carolus Linnaeus, the 18th century zoologist and founder of modern scientific taxonomy, “had a weakness for apes” (Agamben 2004: 23). As Agamben remarks, Linnaeus was unwilling to accept the Cartesian conception of animals as automatons because he was

unconvinced that Descartes had ever seen an ape (2004: 23). This similarity in appearance makes apes uniquely different from other animals, and that similitude has only been validated by the fact that they are our closest relatives. After all, we share DNA and a common evolutionary history. Such likeness has been met with ambivalence, anxiety, disdain, and horror, and more recently, with excitement, curiosity, sympathy, and even love. While their similarities in appearance have no doubt contributed to the human preoccupation with non-human apes, the role of primatology in producing this conception of the ape should not be underestimated.

Primatology materializes across a number of different fields, from anthropology and psychology to zoology, biology, and sociobiology, as well as ethology and ecology. It studies primates from a whole spectrum of different perspectives. “Primate” is that taxonomic order of mammals coined by Linnaeus, to mean “first.” This includes animals such as lemurs, bushbabies, tarsiers, marmosets, monkeys, apes, and of course, humans. While the term “primate” was introduced in the mid 18th century, the appearance of primatology as a methodology is much more recent, dating only as far back as 1941 with Theodore Ruch’s *Bibliographia Primatologica* (Haraway 1989: 24-5).

Its appearance nearly halfway through the 20th century is timely. Primatology can be understood as one part of the more fundamental reimagining of the human in modernity. The Copernican Revolution certainly displaced the human, and troubled its relation to the world. But by the 20th century the cumulative effects of so many new developments, from Darwin’s theory of natural selection and Freud’s theory of the unconscious, to the atrocities of the Great Wars, rendered the human and its relation to the world all the more tenuous. There was a pressing need to redefine it, and resituate it in its place within an increasingly tumultuous terrain.

Primatology took up this project of redelineating the human in relation to the non-human. It is at heart, a comparative science. Even while it is focused on non-human primates, it is invested in the larger project of producing knowledge about human being: its origin, nature, and future. The narratives primatology mobilizes create knowledge about human and non-human apes, but they also shape how we understand the relationships between them, between animals and humans more generally, and the grander Manichean relation between Nature and Culture (Haraway 1989: 5). “Primate” is more than a taxonomic order, then, it is also an apparatus that produces human and non-human subjects, and articulates and prescribes what they mean to each other and to the world.

The stories that primatology tells about humans and non-humans are so compelling they trickle down into popular culture—from Desmond Morris’ *The Naked Ape* and Dian Fossey’s *Gorillas in the Mist* to Jane Goodall’s many publications and films. The majority of our widely held assumptions about apes are informed by these influential contributions. A quick scan of popular books by primatologists betrays an unmistakable theme: *Almost Human: A Journey into the World of Baboons* (Strum 1987), *In the Shadow of Man* (Goodall 1988), *Next of Kin: My Conversations with Chimpanzees* (Fouts 1998), *Ape, Language and the Human Mind* (Rumbaugh, Shanker and Taylor 1998), *Our Inner Ape: A Leading Primatologist Explains Why We Are Who We Are* (de Waal 2005), to name only a few. As much as these titles imply a commitment—even a love—of apes, this commitment is yoked to an underlying interest to get at the ostensibly more important question of human being.

Non-human apes have become inextricable from this human quest for self-knowledge. They offer the potential of accessing our “pre-rational, pre-management,

pre-cultural essence” (Haraway 1989:11). Their symbolic status as keepers of our origins and diviners of our destiny is articulated through perpetual invocations of Judeo-Christian paradisiacal mythology. This is nowhere made so explicit as in the work of primatologist Buruté Galdikas, who writes in *Reflections of Eden: My Years with the Orangutans of Borneo* (1995), that apes are,

our kin. The kin who never left the Garden of Eden and thus never lost their innocence, kin who never made complex tools, never used fire, and never went to war. These are kin who seek no masters, kin who do not need to be redeemed, kin who approximate the ancestors who are no longer on this earth, and kin who indicate the direction that we are going. (19-20)

This rhetoric serves to elevate and amplify apes as prelapsarian paragons of humanity. Non-human apes conjure a fascinating human teleology, a narrative of before and after, of how things were, and how things should be. This invariably positions non-human apes as ideal objects of study for us, for they present the possible reformation and reconstruction of human nature (Haraway 1989: 9).

Apes are seductive semiotic figures so potent for humans that they very easily preclude the possibility of seeing them any other way. They are significant others, but they have been reduced to portals that lead us perpetually back to ourselves. Discussions of non-human primates are replete with references to symmetries, echoes, and parallels in the form of metaphoric mirrors, reflections, and peepholes. As Ken Schweller makes explicit: non-human apes present, “a window into our not-too-distant evolutionary past.” Therefore, in studying them, he surmises “we learn ultimately about ourselves” (2011). Non-human apes are not framed as intrinsically valuable. They are not interesting in and of themselves. Rather, they are instrumentally valuable: they are only

as interesting as the epistemological yield of comparing and contrasting them with humans.

In this cultural framing of apes, we truly see the work of Agamben's anthropological machine. Humans, by virtue of being *Homo sapiens*—humans that know—have no specific identity other than the ability for self-recognition. Our species name neither refers to a category nor a substance, but to an imperative to seek and identify itself. As Agamben summarizes: “man is the animal that must recognize itself as human to be human” (26). Much like Narcissus, the human being is endlessly fascinated by its own reflection but this captivation is its ultimate undoing.³⁵

Because apes are invested with so much symbolism in human culture, it is clear why humans wish to commune with apes. However, the participants of “Apps for Apes” are not just any apes, but orangutans in particular. More specifically, they are captive, mostly Sumatran orangutans living primarily in North American zoos. These orangutans have not been elected for this initiative arbitrarily, it has just as much to do with their species-being as it does with their cultural standing. The orangutan bears a unique characterization in the human imagination. This characterization is not randomly assigned by humans, but inspired by human-orangutan encounters, and more importantly, by the orangutans themselves and how they get on in the world.

³⁵ Given this, it is hardly surprising that humans limit their esteem to animals that can pass the mirror test. The Mirror Self-Recognition test (MSR) has been a standard method for measuring an animal's capacity for self-awareness (and human likeness)—and therefore intelligence and value—since its development in the 1970s. The more pressing question behind the test, however, is not whether or not an ape can recognize its own reflection, but rather why we must place so much value on an animal's ability to do so.

IX. Solitary, Sensible, and Shrewd: Framing Orangutans as Ideal Users

The most legendary orangutan in human culture is a fictional one. It appeared in Edgar Allen Poe's "Murders in the Rue Morgue," what is now considered to be one of the first modern detective stories. The plot follows the investigation of a murdered young woman. However, the real mystery at the crux of the story is the indeterminacy of human nature—or, as Stephanie Rowe so aptly puts it, the *aporia* between the human and the non-human (119). For the story's notorious reveal is that the killer is not human, but an escaped orangutan meant for *Le Jardin des Plantes*.

That an orangutan could be a murderer by killing a human being with its own hands was meant to be terrifying. The human hand was once a symbol of an exclusively human agency. It embodied, as Rowe observes, "willed action born of the consciousness of a self that perceives itself in relation to the world" (107). The horror that an orangutan might be equally capable of such willed action, malicious or otherwise, is consistent with the anxieties that flourished in the wake of Darwin's theories of evolution. The scientific writing at the time cast doubt on human exceptionalism, and presented the unsettling possibility that the notion of a unique and superior human being was merely the figment of an ape's imagination.

Incidentally, the orangutan in Poe's story is purely the author's construction. In fact, though the story relies heavily on taxonomist Georges Cuvier's account of the animal, Poe actively disregards it. As Rowe points out, for Cuvier, "the orangutan is an animal known for its gentleness and tractability" (126). Poe's orangutan is nothing like a real orangutan; it was created in the service of a horror narrative to enact the irrational, murderous essence at the heart of the human. In reality orangutans are not known to be

violent. In fact, in their cultural reputation they are known for being good natured. This status surely contributes greatly to the orangutans' involvement in "Apps for Apes."

The iPad's projected capacitive touchscreens (PCTs) are designed to work with electrical conductors such as the skin of human bodies (Kaerlein 179-180). However, because ape hands are so similar, they can arguably work just as well. In theory, because all of the great apes—gorillas, chimpanzees, bonobos, and orangutans—have padded, hairless hands with articulated fingers, opposable thumbs, and a predisposition for hand gesturing they are equally potential candidates for iPad usage. But just because all apes are physically capable of grasping the iPad and interacting with its touchscreen interface does not mean they do.

In actuality, not all apes are amenable to the iPad. Many are not interested in the device whatsoever, and those that are, are not necessarily concerned with using them as prescribed. In their definitive book, *Animal Tool Behaviour: The Use and Manufacture of Tools by Animals*, Robert W. Shumaker, Kristina R. Walkup, and Benjamin B. Beck recount a well-worn anecdote among zookeepers that describes the varying dispositions, levels of curiosity, capacities for manipulation, and propensities for tool use in each of the great apes. The anecdote speculates about what would happen if a screwdriver had been accidentally left in the enclosure of a gorilla, a chimpanzee, a bonobo, or an orangutan, respectively. Though it does not in any way account for the variation in individual ape personalities, it is an efficient, effective—if facile—means of establishing differences in their general dispositions.

The anecdote is too lengthy to include here. To summarize, it suggests that the gorilla would be apprehensive and reticent to engage with the screwdriver. It would eventually figure out it was not edible and would grow bored with it. The chimpanzee

would seize it excitedly, only to have it taken by the dominant male chimp, who would then explore its uses while guarding it covetously from the others. It would also eventually lose interest. The bonobo would be equally lively with the discovery, but unlike the chimp, would enthusiastically share it with its fellow bonobos. They would celebrate the find with sexual activity, and forget about the screwdriver entirely. The orangutan, meanwhile, would take notice of the tool, but would:

ignore it, lest the keeper discover the oversight. If a keeper did notice, the ape would rush to the tool and surrender it only in trade for a preferred food. If a keeper did not notice, the ape would wait until night and then proceed to use the screwdriver to pick the locks or dismantle the cage and escape. (109-110)

It is hardly surprising, given that gorillas have a reputation for being shy and cagey, that they did not become avid iPad users. They may have been the first test subjects, but proved much too resistant to them. “They were all very scared,” Clair Richard, the primary gorilla keeper at the Milwaukee County Zoo recounts. “Gorillas are afraid of everything. Because it’s something new and different, they’re real hesitant to even approach it” (qtd. in Uebelherr 2011). As such, they are not readily inclined to openly explore new objects in their environments. Furthermore, gorillas do not like to look directly at things, and so the iPad screen presents a particular challenge for them.

It is equally unsurprising, then, that orangutans have allegedly taken quite well to the iPad, given that they are believed to be much more curious and contemplative than other apes. Encounters between iPads and orangutans are consistently framed as successful, and this is certainly helped by their reputation, which naturalizes orangutans as not only well suited for iPads, but also as ideal users. After being presented with iPads, orangutans, one reporter claims, “quickly became Apple converts” (Platt 2012). According to Rob Waugh at the *Daily Mail*, Miami Zoo researchers are claiming that

orangutans “have an 'innate' ability to use Apple iPads - and enjoy using the touchscreens to draw, play games and even videoconference with other apes” (2012). Even Galdikas, a primatologist who specializes in orangutans, observes that, “iPads seem to work for humans. It's not surprising that orangutans, who share 97 percent of their genetic material with humans, like them, too” (qtd. in Fischer 2012).

Orangutans do resemble humans in many ways.³⁶ However their close relation to humans is still under dispute. It is speculated that they are not our closest genetic relatives—that would be chimpanzees and bonobos. In fact, many consider orangutans to be the oldest and most primitive of all the apes. They retain more characteristics of the ancestral hominoid (pre-ape primate) that lived 12-15 million years ago than any of the others (Call and Tomasello 70; Miles 45). Regardless of their degree of similarity, it is not perceived similarity alone that explains why they have been mobilized as ideal users. It has to do with their species history and culture: their physical and cognitive adeptness and their ostensible intelligence.

Admittedly, the above characterizations of species are broad, and run the risk of over-generalizing. However, that danger only exists if we think of species in terms of natural kinds. It is much more helpful to think of species instead as ecologically situated ways of being in the world, as Thom van Dooren does in his *Flight Ways: Life and Loss at the Edge of Extinction* (2014). In his attempt to grapple with the magnitude and meaning of species loss, van Dooren proposes that members of a species be thought of less as life forms, and more as forms of life. In this way they are not simply representatives or ambassadors of their species, but are emplaced participants in the

³⁶ Orangutans and humans share many similarities including gestation period, brain hemispheric asymmetry, characteristics of dentition, sexual physiology, copulatory behavior, hormonal levels, hair patterns, mammary gland placement and insightful style of cognition (Miles 44-45).

making of their species identity. Species does not designate a set of essential qualities, but of ecologically situated practices and embodied knowledges that are at the same time, intimately entangled with a myriad of other species and other ways of life (van Dooren 12).

Orangutans are from the genus *Pongo* and members of the subfamily *Pongidae* and are widely known as “the Red Apes,” for their distinctly auburn-coloured hair. They are exclusively native to Asia. Currently the wild orangutan population is limited to the islands of Borneo and Sumatra, which give the two species of orangutan their names: Bornean (*Pongo pygmaeus*) and Sumatran (*Pongo abelii*). Their species identity has been fashioned from making themselves at home in these places. They have very long arms and short but mobile hind limbs that they have adapted for suspensory locomotion through the arboreal canopies of the rainforest (Call and Tomasello 70). Furthermore, their flat and expressive faces give them a canny human-like appearance, which has had a great influence on their folk history.

In Malay, the word “orangutan” means “reasonable being of the woods” or “old person of the forest” (Miles 43). Traditionally, many locals even believed orangutans could talk but simply chose not to, so that they could avoid being put to work (Schaik 7). Though they are slow moving and demonstrate a reserved demeanor, it is commonly believed that they have a rich interior life, which has earned them the reputation as “thinkers of the jungle” (Schuster, Smits and Ullal 2008). Adding to this mystique is their alleged tendency toward solitude. Females and their offspring do enjoy close enduring bonds, but male orangutans are largely loners. This is probably a feeding adaptation: as large bodied fruit eaters, there is higher competition for food—in instances where food is more plentiful, orangutans have been known to be more social.

They are the least studied of all the apes, which only further amplifies their enigmatic reputation. Because of primatology's emphasis on primate social systems, researchers have tended to favour more explicitly convivial apes such as gorillas, chimpanzees, and bonobos. Also contributing to their lack of study is their relative geographic inaccessibility. Their population density varies between 2 to 7 orangutans per square kilometer, and less than one orangutan per square kilometer in higher altitudes (Call and Tomasello 71). Not only are they dispersed, they are also primarily arboreal—though they do spend some time on the ground—and not easily available for field research.

Wild orangutans are not widely known for their technical adeptness or cognitive sophistication. Though they do build nests out of branches and leaves, the highest form of tool use reported in wild orangutans until recently, is using a broken twig as a back scratcher (Schaik 1). Solitary lifestyles, the reasoning goes, do not create occasions for sharing learned behaviours such as tool use (Call and Tomasello 72). Captive orangutans however, especially those in zoos and research facilities, are recognized for being much more social and intelligent than their wild relatives. They demonstrate abilities to learn, deduce, and invent. Of course, animals in captive environments often outperform their wild counterparts, a phenomenon referred to as the “captive bias” (Haslam 2013). In captivity, orangutans exceed other apes in their ability to manipulate objects (Miles 45). They also display a propensity for strategizing, as illustrated by their ability to be both quiet and crafty.

Nowhere is this better illustrated than in the case of Fu Manchu, the infamous male orangutan who escaped from his enclosure at the Omaha Zoo multiple times in 1968. Zookeepers were mystified by how he was getting out at night. It was later

discovered that he was climbing up into the air vent in his enclosure, crawling to the end of the duct, and picking the lock with a wire, which he kept hidden in his mouth during the day. It is speculated that the wire came from a broken light fixture in a neighboring enclosure, one belonging to an orangutan named Heavy Lamar.

While it is unclear how Fu Manchu got ahold of the wire, as legend has it, he traded cookies with Heavy Lamar for it (see Linden 2002). In fashioning a tool and using it both effectively and surreptitiously, Fu Manchu demonstrated innovation, planning, foresight, and the ability to deceive. Fu Manchu is hardly an anomaly; other orangutan escape artists include Ken Allen, nicknamed “The Hairy Houdini” who was notorious for repeatedly getting out of his enclosure at the San Diego Zoo. The zoo had to hire someone to go undercover in order to figure out how Ken Allen was escaping, and then spent \$45,000 on renovations to modify the enclosure (Adler 1986). Recently the Indiana Zoo spent \$26 million on their International Orangutan Centre, only to have two orangutans escape from their enclosure almost right away (Rudavsky 2014).

Given that enculturation seems to make orangutans smarter and more gregarious, we might assume that they bear within them this potential all along, even in the wild. Their intelligence is embryonic which makes them well primed for the enrichment and edification that human-made environments offer. Under such reasoning, however, it is not the orangutans themselves who have become crafty. Rather it is the work of human intervention and conditioning that has unlocked and liberated these qualities. Yet in a recent study of orangutans from Suaq, a swamp forest in Northern Sumatra, Carel van Schaik encountered wild orangutans unlike any other he had ever studied. He noted that they were “intelligent, socially tolerant, and technologically adept” (Schaik 167). They displayed a range of tool behaviours used to

increase food intake and to make life more comfortable, such as customizing sticks to extract seeds from hard fruits and repurposing leaves as napkins and gloves (Schaik 147).

Such findings suggest that where orangutans are more social, they do exhibit learned behaviours and traditions, which contribute to more of an incipient culture than previously believed (Schaik 137). More importantly, they also suggest that orangutans have complex relationships with their environments, and depending on their circumstances, can develop new skills, and embodied knowledges when they are required for their survival. Thus, different environments simply encourage orangutans to engage with and make meaning from their surroundings in novel ways. If orangutans display ingenuity and intelligence in captivity, this is not strictly a human achievement but developed from the orangutans' receptive and participatory engagement with their environments.

Therefore, encouraging orangutans to interact with iPads in zoos need not be perceived as a form of coercion. Orangutans should not be underestimated. They are gifted with a keen sense of sight (and sound as well) since they require appropriate depth perception and spatial awareness in order to live in the arboreal canopy of the rainforest.³⁷ They use their hands and feet equally for arboreal locomotion, and as a result, have developed a discerning sense of touch. They also rely heavily on tactile gestures for communication (Call and Tomasello 91). These qualities combined, additionally contribute to a sense that orangutans might be predisposed to be iPad users.

³⁷ Dr. Neil Mennie from the University of Nottingham Malaysia is currently studying the eye movements of orangutans to investigate "their ability to search for food and to compare their progress with humans in 3D search and foraging" (Mennie, qtd. in "Seeing the World Through the Eyes of an Orangutan").

At the same time, orangutans should not be overestimated. As Hannah Wirman points out, the assumption that orangutans are ideal and successful users of touchscreen technologies has its limitations. In her research designing digital games for captive orangutans, she has discovered that orangutan-touchscreen interactions often fail. She relates, for example, that orangutans like to use their full palms or fists, or other body parts to touch the screen. The screens have difficulty responding to such large input areas. In addition, the orangutans also approach the screens from unusual angles, moving around quite a bit, while displaying very short attention spans. Furthermore, they do not exhibit any discerning interest toward the screens. Rather, they treat screens like any other object, and as such they can be licked, poked, prodded, or taken and broken apart (Wirman 107). The reality of “Apps for Apes”—that the orangutans cannot hold the iPads directly, also troubles the notion of orangutans as ideal users. And yet, this fantasy persists nonetheless, because the dream of seeing apes successfully interacting with communication technologies is one too willful and too enticing to defer.

X. Postwar Primatology: Humans, Apes, and The Problem of Communication

The origins of this fantastical scenario are rooted in the 20th century western imaginary. Berger famously observed that animals have “secrets which, unlike the secrets of caves, mountains, seas, are specifically addressed to man” (5). In the wake of WWII, western primatology made it its mission to develop methods for accessing those secrets in the minds of apes. Late 19th and early 20th century primate research focused mainly on those living or dead, in laboratories, museums, and private collections.

The primary research imperative was to produce knowledge about the morphology and physiology of ape and simian bodies. It was also, as Haraway notes, a colonial affair where knowledge about the bodies of monkeys and apes were mobilized as part of an overriding racist, colonial-orientalist discourse (1989: 19). But after WWII, primate research shifted gears. It became less interested in studying non-human primates as lone individuals, and more as social beings, involved in larger processes of organization and interaction. Efforts were underway to observe their behaviours and interactions in the wild, as well their behaviours and responses to various stimuli in captive environments.

This is not to say that considerations of primate communication did not exist before WWII—they did, they were just much less systematic and much less technologically implicated. Arguably, animal communication was becoming a much more popular topic of study after the publication of Darwin's *Origin of Species* (1859). However, the first experiments with ape communication did not get underway until the 1930s and 1940s and mostly involved chimpanzees (see Kellogg and Kellogg 1933: Hayes 1951). These experiments involved immersing chimps in human language and human environments. While the apes demonstrated some understanding of human words, attempts at teaching them to respond were uneventful due to their difficulties with vocalizing.³⁸

Thus, interest in primate behavior became secondary to more speculative involvement in their cognitive and neurological capacities, particularly in how apes

³⁸ While many apes can vocalize vowel sounds, they are not able to vocalize consonants, since they lack the ability for “velopharyngeal closure,” which refers to the “brief blocking off of the nasal passages as air is forced through the mouth” which are required for making consonant sounds (Savage-Rumbaugh and Lewin 226).

communicated, articulated and translated intentions into actions. It is hardly a coincidence that the interest in primate communication awakened in tandem with growing popularity of information theory and the cybernetics, which, as Norbert Wiener defines it, is the study of systems of “control and communication in the animal and the machine” (1965: 11). Cybernetics marked a palpable shift away from the organism as its own system, and toward the organism as one nexus in a larger network of information, feedback, and organized action. For Haraway, the cybernetic turn was part of a strategy to temper the post-war anxieties about the destructive impulses of human beings and the fears of continued social instability.

Therefore, primatology was just one part of more concerted efforts that were underway at the time to observe and predict the functioning of social systems. From the mid 1950s to the mid 1970s, primatology addressed postwar concerns by looking for new models of communication and examples of stable social systems in non-human primates (1989: 126-127). From the mid 1970s onward primatology focused less on social stability and more on the strategic possibilities that the study of primates could offer. Primatologists began to document and theorize the mental and emotional lives of non-human primates, in the hopes of identifying and illuminating the origins of strategic behavior (1989: 127-128).

The avid interest in ape communication in the postwar period included recording and defining ape’s “gestural, vocal, and facial expressions for intra-specific communication,” such as Jane Goodall’s early work with chimpanzees (Haraway 1989: 139). In the 1960s, researchers began attempting to teach apes American Sign Language (AMESLAN) to bypass vocalization issues, and build on the apes’ inherent propensity for gestural communication. The first non-human to learn to communicate with sign

language was Washoe (1965-2007), a female chimpanzee, under the auspices of R. Allen Gardner and Beatrix T. Gardner (1989). Meanwhile, Ann J. Premack and David Premack began experimenting with using a symbolic economy of colored plastic tokens to teach apes how to communicate, with varying success rates (1972).

One of the most interesting developments in ape communication was the invention of “Yerkish” by Duane Rumbaugh, as part of his LANA (Language Analog) Project. Yerkish, so named because the research was conducted at the Yerkes National Primate Research Centre, consisted of “lexigrams”: graphical symbols that represent nouns, verbs, adjectives and other parts of speech (Rumbaugh 1977). Lexigrams were a significant development because they were made possible by computers, and more importantly, they continue to be used with touchscreen and tablet computers today. Early experiments were conducted with a chimpanzee, Lana (1970-), who was named after the project. She would activate a lexigram by touching a special crafted keyboard, which would light up and be projected onto a screen (Savage-Rumbaugh and Lewin 28). Eventually gaming joysticks replaced keyboards to maneuver the cursor on the screen (Schweller 2012).

Ape language experiments continued into the 1970s, primarily with sign language such as the work of Herbert Terrace and the now infamous male chimp, Nim Chimpsky (1979). But even these experiments became increasingly implicated in computer technology. Penny Patterson’s work with Koko the gorilla, for example, mainly involved sign language. But, because Koko also understood spoken English, one researcher created a keyboard-computer linkage that enabled Koko to synthesize a human voice by pressing on particular keys (Patterson and Linden 109). Experiments also progressed with lexigrams as well, such as Sue-Savage Rumbaugh’s and Duane Rumbaugh’s work

with two male chimpanzees, Sherman and Austin (Savage-Rumbaugh, Rumbaugh, and Boysen 1978).

By the end of the 1970s, however, the enthusiasm, support, and funding for ape communication research began to dwindle. Some speculate that it was thanks in part to Terrace's later conclusions that apes could not acquire language after all (Savage-Rumbaugh and Lewin 1994). Also factored into its waning popularity were the ethical predicaments of ape communication experiments. As Adrian Desmond has pointed out, apes that have grown up human have "created an unprecedented moral crisis for mankind" (59).

The surge of interest in ape language acquisition, beginning in the 1960s, for example, led to wild infant apes being forcibly taken from their mothers, placed into human homes, encouraged to learn human behaviours and become accustomed to human ways of life. But in most cases, once the apes reached a stage of maturity they became too difficult to care for, and were negligently discarded. Unable to return to their native environments, at best, some of these apes ended up in zoos and sanctuaries. Unfortunately, thanks to their species confusion, they were often lonely and depressed, and unable to get along with others of their kind. At worst these apes ended up in medical research laboratories, where they were no doubt subjected to undue suffering. Many died under lamentable and tragic circumstances.³⁹ The fates of encultured apes, once communication experiments have ended, are precarious at best.

³⁹ See for example the case of the male chimpanzee, Nim Chimpsky (1973-2000) recounted in *Nim Chimpsky: The Chimp Who Would Be Human* (2008) and the documentary *Project Nim* (James Marsh 2011).

Not the craze it once was, ape communication research remains alive and well, with little signs of abating. H. Lyn White Miles continues to work with the male orangutan, Chantek, who uses sign language (Miles 1993). Sue Savage-Rumbaugh and Ken Schweller work with bonobos like Kanzi, at the Bonobo Hope Great Ape Trust Sanctuary in Des Moines, Iowa. Kanzi works mainly with lexigrams in conjunction with computer touchscreens, which he had been using even before the iPad. However, as Schweller observes, the growing commercial availability of the touchscreen with the release of the iPad and other computer tablets, is “helping to spark a renaissance of technology-aided research into primate development and cognition” (Schweller 2012). Schweller and his team have developed a lexigram app called “Bonobo Chat,” as well as text-to-speech synthesizers on Motorola Xoom tablets to build bonobos vocabularies and encourage them to be better communicators.

New technologies such as the iPad fascinate as potential solutions to the perennial problem of interspecies communication, fueling the desire for new interventions. Schweller, for example, insists touchscreen tablets are “giving researchers the world over powerful new ways to study and unambiguously document ape communication” (2012). The touchscreen is deemed to be better than sign language, because sign language, Schweller claims, “leaves too much open to interpretation.” Lexigrams are preferable, he claims, because they work well in conjunction with the computer, and the computer “helps remove ambiguity” (2012). Touchscreen devices are positioned as transparent mediators, rendering communication effortless and automatic. There is a sense that human and non-human apes are situated on the same level, merely separated by a serviceable gap. All that appears to be required is the proper mechanism by which to ferry information back and forth.

XI. Simians, Similitude, and the Production of Communicative Subjects

In order to make this communicative scaffolding thinkable, the relationship between human and non-human apes must be deemed symmetrical, analogous. The notion of apes doing human things is an age-old comedic trope, but one that typically served to affirm human exceptionalism. “It delights us to see apes engage in activities we perform” John Sorenson contends, because “in them we see less perfect versions of ourselves, which we find endlessly amusing. It seems especially hilarious if apes that emulate our behavior do so ineptly, because this reaffirms our superiority” (39-40). This trope is so perennial that we have coined the verb “to ape,” to refer to the imitation of someone or something, especially in an absurd or unthinking manner. However, the more recent “aping” of humans is not so much interested in affirming difference, as it is affirming similarity and equivalence.

This search for similitude has cemented into what Sara Waller sees as a veritable cultural paradigm. In her estimation, it is a paradigm that anticipates surprising similarity between humans and nonhuman primates in terms of the way they think and feel (79). As such, scientific studies are often designed to privilege similarity with apes over profound differences (79). This similarity is not solely cultivated for its entertainment value. Nor is it a means to celebrate affinities. Rather, it still serves to reify human superiority. The more non-human apes appear to be just like us, the more they validate human being as the most legitimate and sought after way of being in the world.

It positions humans as superior and more sophisticated than our less evolved kin. The assumption is that we are helping apes by edifying them, and making them more

like us. Headlines such as “‘Apps For Apes’ Is Using iPads To Help Primates Communicate, Get Smart” (Baker 2012), “National Zoo Orangutans Turn High-Tech with Apps for Apes (Smithsonian Conservation Biology Institute 2013), and “Dawn of the Planet of the iPad-Wielding Apes (Freed 2013) imply that a process of progression is taking place. “Apps for Apes” means to improve the quality of life for captive orangutans. However, it is significantly distinct from other enrichment activities such as climbing on ropes and the like in that it is interested in developing their cognitive and communicative abilities. Giving iPads to apes under the pretenses of augmenting their experience of captivity is a means of cultivating subjectivity, a particularly human subjectivity.

The treatment of “Apps for Apes” in the press recapitulates this penchant toward similitude. The notion of apes using iPads is taken as an affirmation that they are incredulously and delightfully like us—or at the very least on their way to becoming so. One article remarks that, “Humans aren’t the only species on the planet with a penchant for electronic gadgets” (Baker 2012). Many reports on the project describe the orangutans as if they were human. They begin with expositions of unidentified subjects using iPads, only to disclose later in the article that the subjects in question are apes.

For example, Rob Waugh initiates his piece with: “Two 8-year-old twins love their iPad. They draw, play games and expand their vocabulary” (2012). The twins, he reveals next, are actually two female orangutans, Peanut and Pumpkin, at the Miami Zoo. The suggestion is that the manner in which orangutans and humans interact with the iPad is indistinguishable. Headlines such as “Orangutans Go Ape Over iPad Apps” (Uebelherr 2011), “Plugged in Primates: Apes Love the iPad” (ABC News 2011), and

“Apps for Apes: Orang-utans Want iPads for Christmas (Smith 2011) suggest that apes are not only playing with iPads like humans, but take equal pleasure in them as well.

This similitude is also implicitly mobilized in the project itself. As Richard Zimmermann explains, the project’s aim is to make it clear to the public why orangutans need to be protected. They are able to do this, in his view, when they “show zoo visitors how similar humans and apes are, be it through observation, talking with wildlife experts or seeing the apes use the same technology we use everyday” (qtd. in “National Zoo Orangutans Turn High Tech” 2013). While the continued survival of orangutans hinges upon the human desire to care for them, this care is contingent upon instilling an explicit recognition and celebration of our sameness.

This emphasis on affinity may appear benign and equitable, however this similitude is cultivated under extremely asymmetrical relationships. To be sure, apes acting like humans can be impressive, amusing, or emotionally stirring. But framing non-human apes as human only inoculates their strangeness. In making these strangers more familiar, we miss the opportunity to be confused, to learn how to negotiate and make provisional attempts at contact. Instead, we compulsively reenact the same encounter, over and over again—an encounter that, as the histories of captivity and primatology have indicated, will not necessarily benefit non-human apes. We end up immunizing ourselves to the potential richness of others. For we become unable to appreciate the value in difference, in what it means to communicate with respect for the mystery and the magnitude of the other.

XII. The Clever Hans Effect: The Desire for Similitude and the Occlusion of the Other

In one of the more indelible examples of such a missed opportunity is the case of Clever Hans, the 19th century German horse that could allegedly do arithmetic. His teacher, Mr. von Osten, had supposedly taught Hans to add, subtract, multiply, divide, and even spell. When von Osten asked Hans a question, the horse would tap his hoof the correct number of times, indicating the right answer (Rosenthal and Rosnow 406). Upon closer analysis by external researchers, however, it was revealed that Hans was not actually answering the questions. Rather, he was responding to nonverbal cues unconsciously displayed by his trainer.

The researchers found that even the slightest motion of the head, a mere raise of eyebrows, or the flare of the questioner's nostrils could cue Hans to stop tapping (Rosenthal and Rosnow 406). This has since become the classic scenario of miscommunication. That is, as Peters explains, "a smooth interaction that, it turns out, has radically different meanings for each participant" (242). The outcome of these experiments is now called the observer-expectancy bias, where an observer inadvertently influences a research subject with a cognitive bias. It functions as a warning of the dangers of misunderstanding in animal communication. It is truly evidence of the worst human tendency to see, what Peters describes as, "the performance of the other as simply a staging for or projection of the self" (242). Rather than seeing Clever Hans as a differently calibrated being with varying abilities and interests, his trainer took Clever Hans to be a human-like horse. In focusing so much on similitude, he neglected to appreciate the actual communicative processes that were taking place.

Clever Hans did not understand human language or its symbolic systems, but he did nevertheless demonstrate something just as significant. In all the disappointment over Clever Hans' inability to do math, his real achievement has been overlooked. The horse demonstrated an impressive affective sensitivity toward his human partner. Working intimately alongside him, the horse learned to perceive physical signals so subtle that other humans did not initially pick up on them. The horse was in fact demonstrating incredible embodied knowledge and skill. In this way, the story of Clever Hans illustrates not the horse's inadequacy, or the perils of human bias, but the limited nature of the human concept of communication. If anything, the case of Clever Hans suggests that communication is much more complex and variegated than a simple dialogic exchange of information through language.

Communication is not something that one either fails or succeeds in achieving, but a process, a special form of action—creative action. “Communication is, above all else,” Jonathan Sterne persuasively argues, “a *technē*” (2006a: 91). *Technē*, the Greek root of technology meaning “to craft,” is in basic Aristotelian terms both “the process of producing things in the world and the capacity or knowledge of contingency—practical knowledge—that allows and accounts for that production” (Sterne 2006a: 91). It is a process of crafting, but it is also an unfolding sensibility toward the world, an embodied knowledge that makes this very means of relating and making possible in the first place. *Technē* Sterne maintains, “bridges the chasm between possibility and actuality” (2006a: 92). It encompasses both technology—the hard and soft materials of apparatuses—as well as the techniques used to animate them.

Communication is not, then, an organic, natural process of relating, whereby technologies and techniques are simply added. Rather technology and technique—

technē—are endemic, indeed constitutive of communication itself. Furthermore, communication, while often understood to be the essential relation between self and other, presupposes an earlier relation: that between organism and world. As Jakob von Uexküll has made abundantly clear in his concept of *umwelt*, the first relation is that between organism and its surrounding environment. And most importantly this relation is interactive. That is, organisms do not simply live in their world, they also participate in its becoming.

Animals actively make and reshape their environments, communicating with elements in their surroundings through complex processes of signification. In this way, the organism's essential way of being in the world is one of doing. Life itself is a kind of *technē*, a kind of sensibility that allows organisms to not only exist in a world, but to change it. *Technē* is, then, integral to the creation of the *umwelt*. In taking communication to be a form of *technē*, it becomes centrally implicated in the making of worlds, and the crafting of the conditions of possibility for worlds. What communication makes, then, are openings, where strangers can renegotiate their relations, recalibrate their sensibilities in tandem with whatever emerges at the sites of encounter.

XIII. Apps *for* Apes: Accommodating Orangutans as Users

The other, not the self should be the cause of whatever communication might mean.

—John Durham Peters, from *Speaking into the Air* (265).

To a large extent, “Apps for Apes” misconceives communication, and in a misguided gesture of hospitality threatens to put closures on orangutans and their worlds. However, it also creates openings, possibilities for greater appreciation and accommodation for them. At its most rudimentary, the project has encouraged attention

toward activities that orangutans enjoy. Science writer Alanna Mitchell reports, for example, that the orangutans at the Toronto Zoo delight in watching videos of themselves on the iPads, noting that they are especially fascinated opening up their mouths really wide, in order to see inside (qtd. on McDonald 2013). This is perhaps not what humans had in mind when they introduced the iPad to the orangutans. But such disappointments are not uncommon. Wirman recounts that some of the sexually maturing apes she was working rubbed their genitals on the touchscreen, poured liquids on it, as well as food (106). These disappointments are important starting points to think alternatively about the way the expectations we place on our encounters with others can occlude the autonomy and difference of the other.

In the hands of an orangutan, the iPad is not the grand “revolutionary and magical” device that allowed Steve Jobs to hold the Internet in his hands. Apes do not appreciate the status or symbolic prestige of iPads. They do not recognize that these devices have been manufactured by an array of complex processes and materials. Nor do they appreciate their usefulness for human labour and leisure, nor even recognize them as innovative technologies at all, ontologically different from other objects in their environment. The iPad under the touch of an orangutan becomes a purely sensual, material thing. It becomes a surface where light, movement, and sound address its sensorium, and invite it to react—or not.

After several years of participation, zookeepers have discovered that the orangutans demonstrate preferences for apps they like to use. They prefer visual cognition games that use matching and memory. For example, Scott Engel, the iPad Enrichment Coordinator at the Milwaukee Zoo, reports that some of the orangutans are fond of drawing apps like *Doodle Buddy* and *Draw Free*, as well as games that require

dexterity and movement like *iFishPond* and *Flick Kick Football*. They also seem interested in the movement, sound, and color of interactive books like *The Fantastic Flying Books of Morris Lessmore* (Crecente 2011). This choice is of course, offered within a limited set of options, all within the confines of a contentious zoological enclosure.

Nevertheless, this emphasis on orangutan stimulation and pleasure holds the door open for more orangutan-centric engagement than other kinds of ape-technology encounters. As a case in point, the “Apps for Apes” initiative has led to the design and release of an app specifically for orangutans. The app, called *Orangutapp*, evolved from a collaborative effort between the Toronto Zoo and the private design firm, SplitElement. *Orangutapp* is a selector app, whereby orangutans are able to specify which enrichment items they would like to do that day, and what they might like to eat (Wolfe-Wylie 2013).⁴⁰

What is significant about the application is that orangutans are intended as the primary users. As such, the designers considered them in the creation process. For example, they adjusted the size and position of the buttons on the screen because, “Orangutan fingers aren’t as precise as ours,” designer Christopher Lewis explains. “We had to make sure the buttons worked for their hands” (Wolfe-Wylie 2013). The app makes a direct address to their perceptual capacities in order to help them make their choices—no matter how small or limited these choices may be. The app is, admittedly,

⁴⁰ Orangutans can establish relationships between symbols and the things they represent. Anne Russon observed one orangutan who when shown a symbol of a banana on a touchscreen, tried to eat it, suggesting that it could differentiate the image on the screen as more than a random glowing shape (“Quirks and Quarks” 2013). Wirman also makes a similar observation noting that her orangutan collaborators seem to understand the distinction between live footage and graphic elements (108).

being used as part of the apparatus of captivity. However, it gestures toward improving orangutan care, allowing for greater customization within limited communication possibilities. It is valuable insofar as it is crafting a provisional means with the iPad for zookeepers and orangutans to live better, together.

The app does not address any of the problems with the iPad, or the touchscreen itself. As Wirman suggests, humans are habituated to using technologies in “non-ergonomic, uninteresting even nonsensical ways” (110). Orangutans are much more resistive. This movement toward design is an important pivot point that suggests that the project has the potential to move away from its anthropocentric orientation, and toward a more non-human user-centered approach. What is additionally significant about the app is the way it cultivates a correlation between what is onscreen and what is offscreen. Play behavior that moves freely between digital and analog, manual and screen based modes offers, in Wirman’s estimation, more orangutan-friendly engagement (111). There is no “distinctly ‘digital’” for orangutans, she speculates, for the digital “is overruled by the physical features of the screen” (108). Other people, other orangutans, and the myriad of things in their environments become equally co-present co-participants in their activities.

The introduction of this app brings “Apps for Apes” into the burgeoning field loosely referred to as “animal-computer interaction” (ACI). The lives of animals have long been implicated in technologies and constituted by technological interactions. However, this fact has been largely ignored. Little consideration has been given to non-humans as users of technologies. Thus the aims of ACI are to illuminate technologies and techniques that might give animals better quality of life. As Clara Mancini points

out in her manifesto on the topic, ACI should foster a more mutually beneficial relationship between humans and animals

by enabling communication and promoting understanding between them; technology that allows companion animals to play entertaining games with their guardians or enables guardians to understand and respond to the emotions of their companion animals might be consistent with this aim. (Mancini 69)

Some of these new ventures in designing technologies for and with animals include Mancini's own Animal-Computer Interaction Lab (<http://www.open.ac.uk/blogs/ACI>). Others include: "Bronx OoZ," headed by artist and engineer, Natalie Jeremijenko (www.environmentalhealthclinic.net/ooz), the "Playing With Pigs Project" a collaboration between Dutch-based game designers, philosophers and scientists (<http://www.playingwithpigs.nl/>) that designed the multispecies-player game "PigChase" for captive pigs destined for slaughter. Hanna Wirman's TOUCH project is another example, which seeks to "bring new Technology to Orangutans for Understanding and Communicating cross-species for greater Harmony" (<http://ludusanimalis.blogspot.ca/p/touch-project.html>).

We can never know what it is that orangutans ultimately want. Projects that seek to get at this mysterious question are destined for disappointment. Even on the best of days, communication between members of the same species is fraught. Apes may not be "talking" with iPads, but they are still communicating, expressively or with subtle nuance, with the help of their actions and gestures. This is not a diminished form of communication that needs to be advanced and enriched, but a different kind, that requires new attentions and considerations.

In the end, "Apps for Apes" can help us to rethink communication as less about the exchange of information and more about an acknowledgement of the needs of the

other. It also suggests that communication looks much more like play. Play, as Marc Bekoff and Jessica Pierce argue, is valuable because it is a “unique category of behavior that tolerates asymmetries more than other categories of social behaviour” (461). Furthermore, it is by definition consensual, for play cannot occur without mutual participation. Play requires equality or fairness, which they point out, makes it different from other forms of cooperative behavior whether it is hunting, gathering, or care giving (461).

There is, then, within “Apps for Apes,” an incipient gesture of playfulness and hospitality. The project aspires to temper boredom, a modern affliction to which animals living in the cultural spaces of zoos are especially subjected. Boredom leads to depression, stereotyped behaviours, illness, and even death. Admittedly, tackling boredom services a larger agenda: it is a way of keeping animals alive, but also making them interesting to look at. Bored orangutans are also boring for zoo visitors. But regardless of why, there is something valuable in this gesture. It is not entirely successful in enriching the experiences of all captive orangutans in zoo environments, though initial research has shown that touchscreen computer use does appear to offer some cognitive stimulation for certain orangutans (see for example Boostrom 2013; Clay, Galeema, and Maple et al. 2012). It hardly provides a solution to the more troubling issues related to captivity, exhibition, and conservation. However, at the very least it is an acknowledgement that orangutans do not simply require life, but a particular quality of life. It makes orangutan stimulation, pleasure, and enjoyment matter.

XIV. Conclusion: Techniques/Technologies of Hospitality for Strangers

While discussing his experience at the Great Ape Trust, Schweller relates a charming anecdote about Panbanisha, one of the bonobos with which he worked. One day, he and some of his students were watching her tap on the touchscreen inside her enclosure. Upon seeing them, he maintains, “she grabbed her poster-board keyboard and used the lexigrams to invite her visitors to have some juice.” And so, he concludes, “We all stopped working and sat down outside her glass enclosure to enjoy a drink together” (Schweller 2012). This gesture of conviviality, instigated by Panbanisha herself, is a reminder that mental communion is not required to get along well together.

What the touchscreen facilitates is valuable and meaningful. It does not reconcile something so ambitious as the divide between nature and culture nor animal and human. Instead it suggests that these chasms are divisions only we care about, and that in the context of the chance or staged encounter, they are completely beside the point. No doubt, Panbanisha notices that there are differences between her and her guests. But rather than dwelling on these difference, and the limits of her knowing, she uses the technologies and techniques available to her to reach out and offer accommodation anyway.

Touchscreens, like all screens, are places of disclosure and concealment. Touching them does nothing to change this ontological certainty. It only creates, as Derrida notes, a geometrical tangent: it means touching what cannot truly be touched, “a limit without depth or surface, untouchable” (2005: 131). Touch may illuminate a limit, but this limit is not a void. Instead it is a common place that is available to all parties. This place will no doubt always confound us, and ensure that the work of communication is never finished. But mercifully, the limit is a place for contingencies.

Contingencies in turn create instances where displaced strangers seeking accommodation might enjoy hospitable encounters across differences.

Privileging communication as solely a symbolic process that transpires between minds impoverishes our relationships with non-human apes, and others more generally. Rather than accessibility, we should think communication instead in terms of hospitality, of taking others and their irrevocable situatedness in time and place, into consideration. We waste valuable efforts strategizing about how to coax the wild, inchoate interior of subjectivity to the outside, when we would fare better to acknowledge and attend to what is already outside. Communication is not some riddle to be solved and filed away, but a quandary that requires continual encouragement, maintenance, and negotiation.

The following chapter troubles the primacy of the symbolic dimension of communication even further by focusing explicitly on these efforts. It turns toward the work of carrier pigeons and their help with the fleshing out of communication infrastructure in modernity. These birds have been persistently excluded from the history and theory of communication. The forthcoming discussion makes a case for their urgent inclusion. Their involvement makes clear that even when communication involves symbolic informational exchange, it always requires first and foremost a material cradle in order to support its becoming. Not only are non-human animals implicated in establishing the conceptual parameters of communication, they are also deeply involved in the actual material implementation of those parameters. s

Chapter 4

A Pigeon Races Against the Internet to Meet a Computer: Exploring the Feathered Edges of the Modern Communication Network

a bird of the air shall carry the voice, and that which hath wings
shall tell the matter.

—Ecclesiastes 10:20

I. Carrier Pigeon, Meet Internet

In September of 2010 amid the lush British countryside, a couple of data-carrying homing pigeons raced the Internet and won. The event was a ruse meant to raise awareness about the frustratingly low broadband speeds in the rural UK. The hope was to demonstrate an urgent need for upgrades to the network infrastructure. Ten pigeons were tagged with RFID chips and fitted with micro SD flash memory cards containing the same five-minute video. They were then released from a Yorkshire farm to fly the digital video to a second location. Upon their arrival the video would be manually transferred to a computer. At the same time the pigeons were released, a team of humans started to upload the video file to YouTube using the farm's Internet connection. A little over an hour later two pigeons, Rory and Tref, arrived with their video files at Skegness, nearly 120 km away. Meanwhile, back in Yorkshire, the Internet had only managed to upload a quarter of the same video to YouTube ("Pigeon Flies Past Broadband" 2010). What we are meant to take away from this little stunt is that the Internet service in the rural UK is not just slow, but so slow that even a carrier pigeon can surpass it.⁴¹

⁴¹ Incidentally, this was not the first time that the Internet had been outperformed by a carrier pigeon. Internet enthusiasts conducted a similar race in Israel in 2004, while another was held in South Africa in 2009 (See: Ben-Basset et al. 2004; "Pigeon Transfers Data Faster" 2009).

That the pigeons could transmit data faster than the Internet was hardly a surprise to the competition's organizers. It would, however, have been quite a shock to the Internet engineers who had joked about sending data by pigeon two decades earlier. In a series of now famous April Fools' Day RFCs (Request for Comments), David Waitzman—and later, others—playfully proposed the concept of IPoAC (Internet Protocol Over Avian Carrier) to the Internet Engineering Task Force, the ad hoc organization that develops and promotes Internet standards (See Waitzman 1990; Waitzman 1999; and Carpenter and Hinden 2011). What ensued was a long-running lampoon of the carrier pigeon, with its “high delay, low throughput, and low altitude service,” and its absurdly low bandwidth which was “limited to leg length” (Waitzman 1990). These mock proposals were of course, purely speculative. But the fact that they expected the carrier pigeon's defeat, suggests something of the bird's lowly reputation. Conceived as a rudimentary, retrograde relic from communications past, it seemed only natural to assume it would be no match for the world's largest, most modern, and sophisticated network.

By 2001, pitting the pigeon against the Internet was no longer a thought exercise: a group of Linux enthusiasts in Bergen, Norway put these mock proposals to test. Their “Carrier Pigeon Internet Protocol” (CPIP) entailed transmitting a ping command: packets of network data were printed on paper, rolled up, and attached to the pigeons' legs.⁴² When the birds arrived, the data was then scanned and uploaded to a computer (Shankland 2002). This process proved to be quite slow thanks in large part to the necessary reliance on paper, which adds extra steps to the data's transfer. The

⁴² A ping command is a query from one computer sent to another that seeks to verify their mutual connection.

emergence of lightweight flash memory devices, by contrast, means carrier pigeons not only have greater storage capacities, but that the data they bear can be transferred faster to other computers.

The addition of these new technological peripherals has opened up more possibilities for the carrier pigeon. Anthony Judge, formerly of the Union of International Associations, claims for example, that carrier pigeons could legitimately function as a viable “sneakernet.” A sneakernet is a system for transferring digital information from computer to computer using external physical transportation, instead of using the ethernet of a computer network. In light of the many recent breaches in Internet security perpetrated by entities like the NSA, mobilizing pigeons to physically carry digital data is an effective way to curb surveillance and temper the growing insecurity of digital networks (2013).⁴³

While Judge’s suggestion is speculative, it is certainly fortified by current deployments of the carrier pigeon. In addition to the recent pigeon races, carrier pigeons are being actively employed elsewhere. Rocky Mountain Adventures, an American adventure tourism company, for example, has been relying on carrier pigeons to transmit digital data for years. In order to document the adventure experience, the company takes digital photos of their patrons while they are white-water rafting. Because Internet service in the wilderness is so poor, the company employs pigeons to transport the digital photos on SD cards from remote areas back to their home office so the pictures can be ready when their patrons return (“Pigeon Post”). But the carrier pigeon’s contemporary ventures do not end there. They have also been involved in an

⁴³ Judge’s musings have not gone unnoticed. Harvard University’s Internet think tank, the Berkman Center for Internet and Society, included Judge’s proposal in its 2013 annual report (see Gasser et al. 2013).

assortment of other activities including, but not limited to, environmental sensing and experimental cartography initiatives.⁴⁴

The carrier pigeon and the Internet make for an odd encounter, then, but engineers have been fooling around with the idea of transmitting digital data by carrier pigeon since the Internet's early days. Clearly, this trend shows little signs of abating. Summoning the carrier pigeon alongside the Internet is often done for amusement, or as a deliberate provocation.⁴⁵ The carrier pigeon does make a compelling foil for the Internet. Pitting them against one another generates interesting incongruities. But this is only because of their perceived incompatibility, which is based on the prevailing, and misleading, stereotype of the carrier pigeon as the stalwart *ur*-example of communication's most primitive forms. It is considered a throwback to a time when communication was beholden to the physical entities that carried it. Old and obsolete, its appearance in modernity generates an absurd anachronism, one that seems to function as a handy benchmark to measure the technological sophistication of the new.

This chapter hopes to show that there is nothing anachronistic about the carrier pigeon's reappearance in modernity. It is not some haphazard anomaly, a curious discontinuity, or simply a recent trend. The presence of the carrier pigeon, I argue, is

⁴⁴ From 2006-2008 in Southern California, Beatriz da Costa, Cina Hazegh, and Kevin Pronto enrolled pigeons to carry environmental sensors to measure air pollution (see: www.pigeonblog.mapyourcity.net). More recently, Hill Hiroki Kobayashi and Hiromi Kudo developed "The Carrier Pigeon-like Sensing System (CPSS). This communication network depends on data collected from pigeon-borne sensing devices, with "animal-to-animals internet sharing capability." The pilot project hopes to expand the size of monitoring areas such as the contaminated forests around the Fukushima nuclear power plant, which are inaccessible to both humans and their techno-informational infrastructures (2013). "The Brooklyn Pigeon Project," developed by New York architects Aranda\Lasch, meanwhile, consists of attaching a small battery, a camera, and a microphone to each bird. According to the designers, since the birds' flight patterns are affected by sight, sound, smell, and a sense of the earth's magnetic field they can produce multi-sensory maps. Once uploaded, these maps can offer unique alternatives to the technological "grid" maps of modern GIS systems (Stamp 2013).

⁴⁵ In 2012 for example, the office of Olivia Chow, a Toronto MP at the time, made its own April Fools' Day fun when it announced that Chow would employ carrier pigeons in an effort to lower the carbon emissions produced by her office's communiqués (Judge 2013).

perennial. A closer examination of the carrier pigeon's deployment in modernity reveals not only its enduring presence, but also its enduring co-presence with other technologies. Surfacing in tandem with the Internet is in fact a continuation of the bird's involvement in the establishment of technological infrastructures of communication more generally. Exploring the bird's entanglement with other technologies reveals a compelling symbiosis. New technologies and techniques have and continue to modulate and accentuate the carrier pigeon's operations, and at the same time, the pigeon supplements and improves upon the functionalities of the technological infrastructure.

The recent encounters between the carrier pigeon and the Internet are, then, an opportunity to consider the bird's perennial entanglement with the material and imaginative possibilities of communication. The carrier pigeon has endured because it is consistently useful, not just during times of technological failure, but also when our technological aspirations exceed their material realities. We have, and continue to, automatically revert to the carrier pigeon during periods of technological instability and expansion. Rather than a coincidence, this chapter takes this as evidence that the carrier pigeon is imbricated in communication in a fundamental way. Constructing a history of the carrier pigeon and the reality of its deployments in modernity is significant because it reveals something germane to communication.

In physically transporting digital data, the carrier pigeon appears to be doing something positively old-fashioned. In actuality, it is doing the exact same thing as the Internet. Electrical communication may indeed compress time and space, while "cloud" computing may render communication seemingly instantaneous and ubiquitous. But in reality, digital data still relies on materiality and movement. The carrier pigeon draws necessary attention to the fact that even today, digital data enjoys analog travels. The

carrier pigeon does not just materialize communication; it illuminates that communication is first and foremost a material process, and movement and coordination are always required to make material connections.

In addition, an encounter between a carrier pigeon and the Internet should inspire a sense of *déjà vu*. For this is not the first time that the carrier pigeon has met with and worked alongside modern communication infrastructure. Before the pigeon met the Internet, it traveled by train to meet the telegraph. And yet, this noteworthy *rendezvous* has been omitted from the history of communication. This chapter would like to examine why this relationship has been ignored, and consider the consequences of its exclusion. It also aims to make space for this relationship in the history of media and communication to create an opportunity for the carrier pigeon to bring new insights to bear on our understandings of communication.

II. A Black Box, With Wings

He will not mingle with the business of the world while on his way, he will have no intercourse with its inhabitants [...] Our commissioner will execute our will, in spite of any attempt to seize or terrify, to deceive or to injure him. He is one inaccessible to bribery and temptation, and is liable to make no error on his route [...] my humble little message will be borne through the sky, as true as the arrow to its mark, by a bearer whose heart is as pure as the down that covers it.

— “The Carrier Pigeon,” from *The American Penny Magazine and Family Newspaper* (1845: 5).

The carrier pigeon as a medium of communication might be visible in the cultural landscape, but it is equally invisible. To communicate by carrier pigeon is typically understood in terms of opportunistic humans taking advantage of the bird’s mysterious internal homing instinct, and nothing more. In reality, however, to communicate by carrier pigeon is not so simple or automatic. Instead, it involves the complex

coordination of a vast assemblage of animals, humans, technologies, and techniques. This persistent abstraction is the result of what Bruno Latour calls “blackboxing” (1987), a process whereby techniques are hidden by their successful functioning.

The reduction of the carrier pigeon to a mere instrumentality, a means whereby a message is ferried from one point to another, has obfuscated the real work and connection it actually requires to communicate in this way. As such, the carrier pigeon is repeatedly taken for granted as a silent, autonomously operating “intermediary,” a term Latour uses to mean a vehicle that transports meaning without changing it (Latour 2005: 39). The above epigraph provides an effective illustration of this. It implies that the carrier pigeon does not “mingle with the business of the world”: rather it is completely separate from the world in which it circulates. As the following hopes to make clear, however, the carrier pigeon is not an intermediary, but a mediator. That is, a vehicle that has the potential to translate and transform whatever it transports (Latour 1993: 81). The carrier pigeon, despite the traditional assumption otherwise, is not separate from “the business of the world” but deeply enmeshed in it.

Yet it remains a perpetual outlier in the history of communication. Scan the index of any given book on the history or theory of communication, or peruse course syllabi on such topics, and you will be hard pressed to find any reference to pigeons. If they appear at all it is merely in passing. Sometimes they are lumped in with other archaic forms like beacons and torches (see for example Holtzmann and Pehrson 1995). Other times, they are deigned as part of a primitive postal system.⁴⁶ Either way, they are considered emblems of an extinct technology. Any time they are deployed in a modern setting, it is

⁴⁶ Pigeon communication is sometimes called “Pigeon Post,” as it was when it was established between New Zealand and the Great Barrier Reef in 1896. Many other countries did use them as a postal service; the last one was retired in India in 2004 (Allen 107).

typically explained as an act of desperation or, as the opening anecdote suggests, for provocative effect. No matter the context, where or when the carrier pigeon appears in modernity, it is inevitably deemed out of place, and out of time. It is persistently excluded from culture and history.

The carrier pigeon's omission from culture is largely a consequence of its animality. As animal, it is placed in the separate ontological realm of nature, independent from culture. It may be acknowledged as a medium of communication, but it is presumed to be a natural and lesser analog, a ready-made precursor to more sophisticated human-made technologies. The forthcoming history hopes to address this mistaken assumption by demonstrating that the carrier pigeon is not something that already exists. Rather, a pigeon *becomes* a carrier pigeon. Its deployment involves much more than a fortuitous exploit of the bird's mechanistic homing instinct. Instead, the carrier pigeon is a multi-species achievement. It is an outcome of many elements working together in a complex assemblage of people, animals, and things, as well as techniques of both communication and transportation.

Meanwhile, the carrier pigeon is left out of history mainly because it is conceptualized as a pre-telegraphic technology. As such, it is understood as a quaint holdover from an era before electricity when information was still stubbornly beholden to the movement of physical entities. Certainly, the carrier pigeon did exist well before the telegraph, it is in fact one of the oldest means of communication. These birds have been deployed sporadically throughout history; humans have regularly depended upon them to transport critical messages. For example, Hannibal (247-182 BC), the Carthaginian General, allegedly used the bird thousands of years ago to relay messages during his famous advance across the Alps (Allen 102). For centuries after they

remained the only reliable signal system suitable for short-, mid-, or long-range communication (Woods 355).

But the carrier pigeon is also one of communication's most enduring forms. And, not only does it continue to appear despite the development of newer and more ostensibly advanced technologies, it often appears because of them. The carrier pigeon has long been present, at varying scales and intensities, throughout history. While it has retreated at times into dormancy, it eventually returns to work in conjunction with many of the technologies by which it has allegedly been replaced. Yet this salient fact remains unacknowledged in historical discussions of the carrier pigeon.

III. *Déjà-vu*: Reassessing the Reappearance of the Carrier Pigeon in Modernity

Because there has been no historical consideration of its relationship to other technologies, each time the carrier pigeon appears in modernity, it seems sudden, out of the ordinary, and unprecedented. The explanation for the bird's reappearance during the Great Wars provides the most obvious recapitulation of this narrative. One of the most peculiar phenomena of WWI, an article in a 1916 edition of *Popular Science* reads, "has been the revival during its course of methods and implements used in the warfares of medieval times and even of antiquity" ("The Pigeon Spy" 30). The carrier pigeon is one such anachronism, its presence is explained using the old adage about desperate times calling for desperate measures. Because of the ravages of combat, so the logic goes, militaries were simply compelled to rely on presumably low-tech and antiquated alternatives. As Major General Fowler, chief of Britain's Department of Signals and Communication, writes:

when the battle rages and everything gives way to barrage and machine gun fire, to say nothing of gas attacks and bombings, it is to the pigeon that we go for succor [...] Regular methods in such cases are worthless and it is at just such times that we need most, messengers that we can rely on. In the pigeons we have them. I am glad to say they have never failed us. (qtd in Wynne 152-3)

This alibi for the carrier pigeon's reappearance in technological modernity, and its casting as both a purposeful anomaly and a technological understudy, remains unquestioned. Certainly, the carrier pigeon has been deployed as a provisional substitute for faster and more efficient media, but such cases are not exemplary. More often than not the carrier pigeon operates in relation to the wider technological landscape, not apart from it.

The Great Wars might have marked the carrier pigeon's most conspicuous reappearance in modernity. However, its resurfacing at this cultural moment was no discontinuous intrusion. It was a continuation of the bird's growing involvement with modern communications infrastructure, an involvement that began in the early 19th century with the second industrial revolution. To be fair, the carrier pigeon has to some degree always existed in relation to other media. Given its legacy of transporting handwritten or printed messages, it is inextricable from the written word, paper, and writing implements. However, beginning in the 19th century, the carrier pigeon became much more substantially implicated with other media. During this time, it was an essential component of a much larger burgeoning technical assemblage.

What follows, then, is an examination of the realities of the carrier pigeon's deployment during key points in modernity, with close attention to its relationship to technologies of communication and transportation. It will sketch the history of their

work with merchant bankers, fledgling news agencies, French citizens in the Siege of Paris during the Franco-Prussian War, and military personnel in Europe and North American during the Great Wars and beyond. Rather than a history of how humans used carrier pigeons, this chapter aspires to construct a history of how carrier pigeons participated in the organization and coordinated action of the modern communication network.

That the carrier pigeon enjoyed a particular renaissance and increased intimacy with the technological landscape in the 19th century is not accidental. Its re-emergence during this time corresponds with significant technological developments. It reappeared as communication and transportation infrastructures—primarily those of the telegraph and the train—were just coming into being. These infrastructures were not implemented overnight; their expansion, uneven and unstable, transpired in fits and starts. The carrier pigeon was an auspicious addition: it was called upon as a complement. It provided a stopgap, fleshing out the existing infrastructure, and supplementing and augmenting its functional capabilities. At the same time, this infrastructure optimized the carrier pigeon's own operations, making it more efficient and effective than ever before. Rather than adversarial, the relationship between carrier pigeons and modern technology during this time proved kindred and symbiotic.

The carrier pigeon's relationship with the telegraph presents the most interesting case of symbiosis. At times, the bird was essential to its material implementation and optimization. Yet there is no mention of the carrier pigeon's contributions in historical discussions about the telegraph. This becomes an even more striking omission given the telegraph's perceived significance to the field of communications. The telegraph has, for example, been heralded as one of communication's most important inventions. In his

seminal essay, “Technology and Ideology,” James Carey famously identifies the telegraph as the very archetype for modern communication media. It is so exemplary, he contends, that it “can stand metaphorically for all the innovations that ushered in the modern phase of history” (2008: 156).

All modern communications inventions, Carolyn Marvin similarly echoes, are merely “elaborations on the telegraph’s original work” (3). Even the computer, she remarks, “is no more than an instantaneous telegraph with a prodigious memory” (Marvin 3). Tom Standage adds on this thesis, arguing that the Internet is but a continuation of the social transformations first initiated by the telegraph. Adding fodder to this notion is the fact that even the Internet’s infrastructure is currently mapped on and built in to places and pathways once used for telegraph infrastructure. The telegraph has clearly been incredibly influential to the history of communication; as such it has contributed significantly to our understanding of technological change and its consequences. But it has also been formative to our conceptualization of communication more generally.

Even now, despite its ostensible obsolescence, the telegraph continues to haunt our definitions of communication. Communication is considered a fundamentally symbolic process. This definition of communication is, as Jonathan Sterne notes, a direct outcome of the way the telegraph has been historicized—especially with regards to its relationship to the train. It is now widely held, for example, that the telegraph was a unique technology that was involved in a process wholly different from the train. As such, it irrevocably separated communication from transportation and transformed communication from a mundane physical process, into a distinctively, and more meaningfully symbolic one. This narrative of the telegraph’s impact Sterne contends,

has resulted in an *a priori* disciplinary privileging of the symbolic over the physical (2006b). This under-appreciation of transportation has led to an incomplete and impoverished conceptualization of communication.

The omission of the carrier pigeon's relationship with the telegraph is glaring, but given the way the telegraph has been historicized, it is perhaps inevitable. Next to the telegraph, the alleged progenitor of true symbolic communication, the carrier pigeon does not appear as a form of communication at all, but of transportation. Construed as an instrumentality, it is reduced to a physical conduit between human beings who ultimately conduct the more meaningful communicative (i.e., symbolic) work of writing, reading, and interpreting. Being categorized as a form of transportation would not have such a diminishing effect, however, if transportation were not so undervalued in communication studies in the first place.

To rectify the carrier pigeon's absence in the history of communication, to reinstate its presence, and appreciate its value, not only requires constructing a history for it. It is also necessary to redress the devaluation of transportation more generally, a trend borne of the telegraph's historicization. In "Transportation and Communication: Together as You've Always Wanted Them," Sterne re-historicizes the telegraph by revisiting its material relationship with the train in the 19th century. What he discovers from this exercise is that the telegraph and the train were actually doing the same things at the same time. Though telegraph signals governed the movement of trains, the train tracks also governed the movement of telegraph signals. After all, telegraph wires, the circuits of telegraphy, had to follow the same paths as the train tracks (2006b: 120). Rather than marking a separation of communication from transportation, the emergence of the telegraph demonstrated a point of greater connection between these

processes.

Inspired by this revelation, this chapter proposes that when we re-historicize the telegraph *with* the carrier pigeon, we illuminate another previously neglected nexus of interconnection between transportation and communication. Acknowledging the carrier pigeon's role in materializing communication is also a way to admit the bird's involvement in imagining the speculative possibilities and conceptual parameters of communication. In addition to being implicated in the technological landscape, then, the carrier pigeon also articulates something fundamental about the process of communication: namely that it is inseparable from transportation.

While communication sometimes involves the symbolic, it is first and foremost a material process beholden to movement. Materiality and movement are not merely the means by which communication takes place, but constitutive components of communication itself. As such, this chapter offers further evidence to support Sterne's claim that communication is most appropriately understood as organized movement and action (2006b: 118). The benefit of thinking this way, Sterne contends, is that it restores to communication its essential sociality (2006b: 132). By grounding it in the physical world, we open up communication as a vital process in which we are all implicated. Communication no longer needs to be reduced to an elite and intimate symbolic undertaking that transpires solely between human conspirators. Instead it is a process that embraces a sprawling and dynamic assemblage of heterogeneous but mutually dependent elements, enlivened at times by more-than-human participants.

IV. Getting Beyond Human Phenomenology

To presumptively privilege communication as a symbolic form is to denigrate the human and nonhuman physical forces at work in our social world, and to treat the physical world as an inert arena where our symbolic forms go to work.

—Jonathan Sterne, “Transportation and Communication: Together as You’ve Always Wanted Them,” from *Thinking with James Carey: Essays on Communications, Transportation, History* (2006: 131).

History and theory are enmeshed to such a degree it is impossible to separate them. They affect one another and, together, create the conditions of possibility for the production of knowledge. The histories we tell about communication inform our theories. At the same time, the theories we use to make sense of communication, our concepts and models, also inform how we narrate communication history. To modify one is to modify the other. Carrier pigeons have been excluded from the history of communication, and therefore have been prohibited from bringing anything to bear on how we understand communication. Bringing the carrier pigeon into the history of communication is a valuable endeavor: it is an opportunity to enrich our theories of communication. At the same time, however, in order to create space for the carrier pigeon in history, it is equally important to readjust the theoretical scaffolding which supports our current definitions of communication.

At present, communication is primarily understood to be an intangible process of signification that mediates our experience of the material world. This immateriality, Jeremy Packer and Stephen B. Crofts Wiley observe is the ontological presupposition that defines our understanding of communication. As a result, communication is assumed to be the domain of signs and symbols, messages and meanings, rhetorical strategies, ethereal transmissions and “the superstructural insubstantiality of ideology

and culture” (Packer and Wiley 2012: 3). As much as we admit that communication has its physical and material dimensions, it is implied that they are less meaningful and socially constitutive than anything that happens at the symbolic level.

This prevailing sense of communication as immaterial contact between human individuals is pervasive, but relatively new. Before the 19th century, communication was not an art of forging connections with symbols or seeking out mutual recognition across chasms of incomprehension. As John Durham Peters argues in his historicization of the term, communication used to involve tangibles: from the Latin *communicare*, it meant to impart and make common (7). At some point, however, communication was dematerialized. The alleged catalyst for this sea change was the advent of electric communication technologies such as wireless and wired telegraphy. It was not until after the telegraph, Peters contends, that communication went from being a kind of physical transfer or transmission, “into a new kind of quasi-physical connection across the obstacles of time and space” (5). Thanks to electricity, communication appeared to be no longer anchored to the crude materiality of the physical world.⁴⁷

The shift toward immateriality that expressly pivots on the telegraph is reiterated in Carey’s now foundational historical narrative. The telegraph, he posited, was a turning point for communication because for the first time, information could move independently of and faster than physical entities (2008: 215). As a result, Carey maintains, the telegraph wholeheartedly separated the symbolic from the physical

⁴⁷ In Peters’ estimation, the qualities of electric communication happened to fortuitously resonate with old and new ideas about immaterial mental contact in the intellectual traditions of Christianity, spiritualism, and British empiricism (5, 63). This intellectual architecture helped the modern notion of communication to take root.

(2008: 215). Not only did the telegraph divorce communication from physical movement he adds, it also enabled the former's power over the latter (2008: 157). To illustrate this, Carey points out that thanks to its accelerated informational speed, the telegraph was able to control the movement and direction of trains, and the distribution of any cargo contained therein. The telegraph's instantaneity proved not only formative in the development of communications, it also became the model and mechanism for modern organizational control. In this capacity, the telegraph not only influenced the communications landscape, it also steered the developmental trajectory of modern western society.

This narrative, that the telegraph freed communication from transportation, and then imbued the symbolic with the power to control the physical, has remained relatively uncontested in the field of communication studies. Sterne offers a compelling reason why Carey's thesis has been so easily taken up by other scholars: because it appears by available evidence to be true. The conceptual separation of communication and transportation is validated by the fact that they seemed to be separated in reality. Carey's interpretation of the telegraph was not wrong per se, Sterne posits, it was merely informed by the human individual's phenomenological encounter with the technology (2006b: 123). Based on the subjective experience of a single human standing in one place, electric transmission does indeed seem faster than physical movement.

This human phenomenological experience naturalizes the assumption that the telegraph forestalled the necessity of having to physically and laboriously send messages from one place to another. The fact is, electricity may appear instantaneous, but that does not mean that transportation has not taken place. There is movement: it has simply transpired at a rate and a scale that eludes human perceptual thresholds. Human

perception is limited, and cannot account for the operational magnitude of the telegraph's infrastructure. Thus, if we build our histories and theories of communication around the human individual, and take two bodies in conversation as the basic unit for communication, then we inherit a very limited understanding of what is in fact a more expansive and complex process.

V. Communication as Assemblage

Communication is fundamental to the production of reality. But we do not appreciate the magnitude of this process, its grander implications, and its stakes because our understanding is founded on a strictly human metaphysics of presence. To broaden and deepen our understanding of communication it is therefore necessary to jettison this anthropocentric frame and speculate outside the limits of human phenomenology. It is impossible to know or to qualify what the experiences of modernity were like for homing pigeons trained to travel in communication networks. However, this study aims to at least acknowledge that while human beings were trying to come to terms with the modernity's oft-cited "annihilation of time and space" and the sense of "all that is solid melting into air," carrier pigeons were making their own adjustments.

Pigeons adapted to inventive breeding, new feeding schedules, and training techniques. They also had to become accustomed to different rates of movement, and odd qualities of space-time. They were nestled in baskets in the bases of air balloons, thrown from airplanes, and lowered to the ground in parachutes. They grew accustomed to the smooth velocity of train travel, endured the rhythmic jostling of automobiles, and the labored gain of bicycles. They felt the slow advancements of ships, and the

compressed heavy air insides submarines. They habituated to peculiar living conditions, adjusted very well to unknown terrains, temperatures, and variations in light. They also endured changing travel routes and thoroughfares, and perched on newfangled architectures. They grew familiar with strange sights, sounds, and smells.

Acknowledging and speculating about the carrier pigeon's experience in modernity is one step toward thinking about communication as a process that is not limited to our human sense of it. To appreciate communication as something truly social, it is also necessary to look toward the materialities and movements that make communication possible. Shifting our focus toward infrastructures is a way to make communication more inclusive, instead of an exclusive process that belongs solely to the domain of the interpersonal. For example, by revisiting and reassessing the relationship between the infrastructures of the telegraph and the train in the 19th century, Sterne argues, *pace* Carey, that transportation and communication cannot be disentangled. Rather, he argues, they both equally create the conditions of possibility for action, while also being the very substance of that action (Sterne 2006b: 125). From his attention to infrastructure, Sterne is able to put forth his definition of communication as primarily organized movement and action—that is sometimes symbolic, other times not (2006b: 118).

What Sterne's historical revision makes clear is that our understandings of communication have been compromised by an anthropocentric orientation toward technology. This human bias has led to a kind of purification of communication from transportation, which has consequently limited our appreciation of transportation as a constitutive process. To help repair this rift, is necessary to study points of interconnection between technologies we traditionally separate into nonsymbolic

“transportation” and symbolic “communication” (Sterne 2006b: 118). Investigating the carrier pigeon is one such strategy because not only does the carrier pigeon network itself combine the processes of communication and transportation. It also relies equally on two typically differentiated technologies of the telegraph and the train.

The actualization and operation of the carrier pigeon network relies on a wide array of heterogeneous components. Though it is consistently treated as a handy black box, once we begin considering it as an assemblage, it becomes no longer tenable to imagine it a distinctive mode or medium unto itself. It is so much more than a mere instrument by which messages are transported from one point to another. In addition to human and animal bodies, its operation utilizes multi-species affects, sensibilities, and corporeal knowledges. It involves a whole host of ritualized practices, techniques, movements, and flight paths: compartments that are always contingent upon planned and unplanned environments and shifting atmospheric conditions. Additionally, it further relies on an eclectic collection of materials, peripherals, and technological supports. Upon closer examination, the carrier pigeon, then, demands that it be conceptualized less as a mode or medium of communication in the traditional sense, and more as an assemblage.

Assemblage, translated from the French *agencement*, was first introduced by Gilles Deleuze and Félix Guattari in *A Thousand Plateaus*. It names a dynamic gathering up of diverse elements, wherein one part is just as essential as any other to the actualization of the whole. Most importantly, assemblage does not refer to a final form, a configuration that is produced. Rather it designates one that is always in the process of being produced, producing what is, and creating the conditions for what is possible. To think with assemblage means not distinguishing between immaterial and material, thus

bypassing the communication/transportation dichotomy. Instead it provides a generous understanding of materiality as an emergent and distributed process conditional just as much on the immaterial as the physical. Thinking communication as assemblage puts aside questions of representation for more important questions about the processes that make representation possible in the first place.

Assemblage is a sprawling, contracting, and multifaceted formation. As such it can be a confusing, vague, and useless as an explanatory concept. But as Jennifer Daryl Slack argues, it can be especially useful for understanding communication because it too is equally ungainly and hard to grasp. Communication is a highly complex process that is too often reduced to a kind of coherent and linear process of articulation into which technology is merely added. As Slack argues, this reduction depicts humans interacting with one another using coherent and chronologically occurring technological arrangements, called “modes,” and dominant cultural forms, called “media” (147). Modes and media are believed not only to facilitate and guide the encoding and decoding of meaning, but also define the shape of culture and the very construction of reality.

This traditional approach to communication is not only deterministic and teleological it also mistakes a unique category of technology—communication technology—as primarily responsible for the shape and texture of culture (Slack 146-7). Slack rightly points out that new material conditions, practices, and concepts such as those initiated by the digital, the emergence of biotechnology, cyborgs, artificial intelligence, and companion species are all challenging the usefulness of this traditional rubric. But as the carrier pigeon suggests these challenges are not just coming from the present moment, they have in fact, been here all along. As such, they may never have

been entirely appropriate for the study of communication. Such a realization offers yet another glimmer of the potential ramifications of the carrier pigeon's exclusion from the field of communication.

VI. A Proverbial Skeleton in the Closet of History

Back in 1982, as David and Ann Martin were removing the contents of their old chimney, they found amidst a deluge of soot and cinders, a scattering of bird bones. Attached to one of these bones was a red metal capsule: inside, a rolled up piece of delicate parchment. Under the heading "Pigeon Service" was scrawled an alphanumeric code. The bird, it has since been confirmed, was a WWII Allied forces homing pigeon. It is speculated that it was probably traveling from Nazi-occupied Normandy to a nearby classified pigeon loft, either at Bletchley Park in Buckinghamshire or at General Montgomery Headquarters in Reigate, located just a short distance from the Martins' home (Wilkes 2102). It most likely ended up in their chimney inadvertently, though the exact cause of death remains unknown.⁴⁸

Once the novelty of their discovery wore off, however, the pigeon's remains receded into obscurity. In 2010, the Martins had donated the encrypted message to Bletchley Park, the original home of Britain's intelligence centre, now a museum. The museum's curators were perplexed by the message, but remained convinced of the significance of their unique acquisition. They finally disclosed its existence in a press conference in November 2012. They also appealed to the public for help decrypting it. In

⁴⁸ It may have gotten lost as a result of inclement weather, succumbed to exhaustion, or even to injury after being wounded by German snipers while crossing the English Channel. The pigeon may have also perished from fumes after resting too long on the chimneystack (Cowell 2012).

addition, they passed the message along to the UK's current intelligence service at Government Communication Headquarters (GCHQ) for further analysis (Parnell 2012).

The message was addressed to "XO2"—now thought to be a code for bomber command—and was signed by a Sergeant W. Stott.⁴⁹ The message is allegedly unique for several reasons. First, it was written in code: information sent by pigeon in the war was supposedly written in unencrypted longhand (Telegraph Reporters 2012). Second, the code was unlike anything the curators had seen before. And, the codebooks and computers used by Bletchley Park could not be consulted, since they were all destroyed after the war (Telegraph Reporters 2012). Third, it was also marked as a duplicate: "40TW194" carried one copy, while pigeon, "37DK76," carried another. This suggests that the contents were significant enough that they warranted an additional transmission (Cowell 2012). Fourth, while the British numbered all of their pigeons, they also typically kept files on them, where they recorded their various missions. Neither "40TW194" nor "37DK76" were referenced anywhere in the available archive (Cowell 2012). It is now believed that they belonged to the British Special Operations Executive—a clandestine unit that conducted enemy sabotage missions throughout the war (Wilkes 2012).

All of the above details are of questionable validity, but nonetheless served to imbue the message with alluring mystery. *The Daily Mail* took the opportunity to sensationalize the find, claiming that historians believed the message would offer new details and important insights into British war history (Wilkes 2012). The message and

⁴⁹ Stott was a 27-year-old paratrooper from the Lancashire Fusiliers. Military records show that he was parachuted into occupied Normandy on D-Day to assess the strength of the German occupation in that area, and likely sent his intelligence back via pigeon to Allied command (Telegraph Reporters 2012).

its secret contents inspired a whole host of grander questions about why and under what circumstances it was sent, and what imagined tragedies transpired after it was lost in transit. Of course, a missive lodged in limbo is irresistibly enigmatic; it inevitably inspires flights of the imagination. But in focusing too intently on the meaning of the encrypted message, we ignore the real derelict in this scenario: the pigeon itself. It may be dead, but it once enlivened and substantiated a complex and significant process of communication. Ignoring the pigeon means not only privileging content over form, but also separating the materials of communication from the world in which they circulate. The very conditions of this particular pigeon's internment ultimately function, then, as a powerful metaphor for the historical obfuscation the carrier pigeon more generally. The hearth, the very material-semiotic support for human life becomes instead, for 40TW194, a place of death and forgetting. The carrier pigeon and its energies were, on countless occasions, essential to the coordination of human activities. Once spent, it remains concealed in the foyer of history. And, despite its discovery it is not even invited in. The carrier pigeon—as a form of communication, as an embodied way of being in the world—is missing in action.

In order to consider what the carrier pigeon might offer to our understandings of communication, it is necessary to first make space for it in history. This involves much more than simply listing off the various ways these birds facilitated human activities. As such, this upcoming section attempts to flesh out their particular ways of being and doing which made communication possible. Communicating with carrier pigeons involves creating and engaging an array of complex relationships, not just among humans and pigeons, but also among pigeons and other technologies. Rather than being a separate intermediary between pre-existing links, the pigeon formed and shaped

these linkages. Ultimately the carrier pigeon proves deeply entangled with larger systems of communication and transportation in modernity. They are not inert tools by which humans communicate and make history, but rather makers of history themselves.

As Wendell Levi writes, “All available evidence shows that from the time primitive man first domesticated animals, the pigeon was regarded as the highest of all speechless creatures, and was an integral part of the life of man” ([1965] 1996: 13). This is high praise but it is difficult to give it much credence since “all available evidence” does not exactly amount to much. Little authoritative, well-researched accounts have been written about pigeons, let alone homing pigeons as a communication medium. To craft a history of carrier pigeons means relying on popular trade publications, the work of amateur historians, cultural anecdotes, and old military records. While these do not necessarily make for rigorous documentation, the writing of animal history is often plagued by such challenges.

History is often written with an anthropocentric orientation, in large part because it is informed by human documents and traces. Animals do not leave the same kinds of traces that humans do. Therefore, writing an animal history requires a reconsideration of what constitute acceptable sources. The history of animals exists in the negative space around human accounts. Limited glimmers of carrier pigeons themselves and their arrangements with things, glimpsed in the pop-cultural record, are sometimes all that are available. As many animal historians agree, animal history is always constructed *sous rature*, a phrase Derrida borrowed from Heidegger to mean under erasure or crossed out. That is, it is barely there, poorly visible, yet still legible (see Benson 4; Fudge 2002a: 6). Following these indistinctive trails is where a history of the carrier pigeon must begin.

VII. From Plucky to Piteous: Pigeonholed in Military History

Little scrawny blue and white
 Messenger for men who fight,
 Tell me of the deep, red scar,
 There, just where no feathers are
 — “Cher Ami” Harry Webb Farrington,
Poems from France (1920).

Thanks to their deployment during wartime, military history seems to be the only place where the carrier pigeon’s work has been acknowledged. This is certainly where carrier pigeons are the most visible. However, they appear in this historical record less as real animals and more as figures. The realities of their involvement are abstracted in two ways. One way, is that they are itemized and quantified in lists: individual pigeons are identified alongside their achievements, which often include posthumous awards like Dickin medals.⁵⁰ Or they have been honoured en masse in the form of monuments. One in Brussels is dedicated to “Les Pigeons Soldats,” while another in Lille, France, commemorates the 20,000 pigeons that died in the line of duty during WWI (Gardiner 99). These commemorative gestures appear generous, but they are superficial at best. After all, monuments are meant to activate cultural memory, to cultivate attention to the past by bringing history into the present. They can offer little for carrier pigeons, for there is no meaningful cultural memory to be activated. What we get instead are merely statistics about how many pigeons were deployed, how many messages they sent, and how their actions benefitted humans.⁵¹

⁵⁰ The Dickin Medal was established in Britain in 1943 by the People’s Dispensary of Sick Animals. It was instituted as a version of the Victoria Cross reserved specifically for animal gallantry in military conflict. Overall, thirty-two pigeons were awarded this medal, which constitutes half of all the medals awarded. Other recipients include horses, dogs and one cat (Gardiner 129).

⁵¹ Lt.-Col. Osman’s *Pigeons in the Great War* (1928) for example devotes fourteen pages of his book to an inventory of the British pigeons, which lists their number, colour and sex, as well as their achievements. Some of these are more detailed than others, but many or merely described as having done “consistently good work.”

The second way carrier pigeons are abstracted is through a process of anthropomorphic idealization. Stories of pigeons in the war consist of amusing or tragic anecdotes about exceptional individual birds. They are told with melodramatic flourishes and platitudes that celebrate courage, suffering, stoicism, and sacrifice. As Jilly Cooper confesses of her experience writing her book, *Animals in War*, the history of animals in war is “written in tears and not in ink” (qtd. in Gardiner 6). Juliet Gardiner’s *The Animals’ War* betrays a similar proclivity for sentiment over serious consideration. The book, a companion to the British Imperial Museum’s eminent exhibition of the same name, is incredibly thorough and informed by a rich archive of materials. But again, this archive is cobbled together to saccharine effect. This way of historicizing animals in war certainly generate pathos. But it does very little to deepen our appreciation for the animals themselves or further our understanding of the complex ways in which they were actually implicated in communication and the logistics of war.

The treatment of Cher Ami, the iconic war pigeon alluded to in the epigraph above, effectively illustrates the historical abstraction of the carrier pigeon. A British homing pigeon given to the U.S during WWI, he is famous for saving a couple hundred U.S soldiers from being killed by friendly fire (Wynne 139). Trapped behind enemy lines, the soldiers had been staving off attacks for days, and half of their battalion had been felled. Nearby, American troops began to release a massive artillery barrage, not knowing the harm they were unleashing on their trapped comrades. With no other way to alert the Americans of this fact, the “Lost Battalion” as they are now known, sent messages off with several pigeons. The Germans immediately shot down the first two

birds. Only the last bird, Cher Ami, made it to its destination. He delivered the message and managed to save the remaining men.

The bird, however, was badly injured by shrapnel after takeoff. He was covered in blood when he arrived. One eye was hanging out of its socket, a gaping hole had been ripped into his breast, and his leg had been blown off. The message he carried was dangling from the thread of a tendon. The bird eventually succumbed to his injuries, but he survived long enough to get an officer's berth on his journey back to the US, and a hero's welcome upon his return. In addition, he was awarded the French Croix de Guerre with a palm (Blechman 24). His maimed body has since been stuffed, and is on display at the Smithsonian Institution in Washington.

Other accounts of individual pigeons follow the same template. In his book devoted to the topic of pigeons in the WWI, Lieutenant Colonel A. H. Osman writes of Crisp, a recipient of the Victoria Cross, who carried the final message of a dying skipper after a U-boat attack, which led to the rescue of the remaining crew (Osman 21). Pigeon 2709 was also awarded the V.C. She was shot down upon her release only to lay out in the rain all night. The following morning, she recovered just enough to make it back with her message, but she "staggered on the floor of the loft and died before the officer could remove the message holder from her leg" (Osman 56). G.I. Joe meanwhile, saved over a thousand British soldiers when he delivered the message that called off a planned American attack during WWII. He was later decorated with the Dickin Medal for valor, and retired at the army's Pigeon Hall of Fame (Blechman 36).

This emphasis on individual animal loyalty and suffering is also apparent in the many war memorials and monuments that have been erected throughout Western countries over the last century. For example, the "Animals in War" memorial at Park

Lane, London, unveiled in 2004 is engraved with the words: “they had no choice.” As Cooper explains, the animals “had no idea why they were fighting or when the nightmare would end. They gave their service, their lives, and their love without any thought of reward” (qtd. in Gardiner 9). This framing of animal participation as a sacrifice carried out willingly but innocently is troubling. As Burt points out, the notion of consent with regards to animals is completely inappropriate as it is (2006: 71). Choice is a particularly human concept that cannot easily be applied to animals, especially with regards to their participation in human conflicts.

More to the point, this sacrificial framing suggests that animals are acting out of some kind of innate loyalty to human beings. They may not “choose” to engage in war, but the fact that they do seems to be interpreted as though they sense its importance on some level. This kind of thinking serves to naturalize human privilege and legitimize human conflicts (Kean 2013: 240-1). While the acknowledgement of animal suffering and their devotion appears to be about animals, it is actually more so about human beings. As Cary Wolfe explains, the unquestioned assumption of human superiority, inevitably requires the sacrifice of the animal (2003: 43). This sacrifice is literal insofar as animals suffer and die so that humans may live, but it is also figurative. Animals die so that humans may live with themselves. As Gardiner insists, looking back at animals in wartime can restore “humanity in warfare” (10). Animals introduce purity, innocence, and benevolence in war, and rescue the human from its historical legacies of needless barbarism and atrocity.

A recent collection of essays entitled *Animals and War: Confronting the Military-Animal Industrial Complex* (Salter, Nocella and Bentley 2014) emerges as an ostensible counterpoint to these mawkish or self-serving accounts. The deployment of

animals in war is not inevitable, these authors claim, but rather a discursive function of the military-industrial complex. As Colin Salter explains in the introduction, the reality of animals in war is ultimately a story of exploitation. That is, animals are “tools of war for human ends, on human terms and at the whim of anthropocentric, speciesist and human chauvinist notions” (Salter 1). The contributors repeatedly enumerate the dangerous circumstances of war, and the various ways animals suffer as a result. Animals are caught in the crossfire, used as human shields, sentinels for landmines and gas, or attacked in the front lines of battle. Or, they are the targets of willful assaults, while otherwise mishandled, displaced, or abandoned when human conflicts destroy their homes. Furthermore, they also suffer in laboratories as part of weapons research. These authors take great care to illustrate that animals in war are not heroes at all, but unnecessary victims of untold suffering.

This committed attentiveness to disclosing the suffering of animals is meant to criticize human domination, and portray the human exploitation of animals in a negative light. However, it ends up underestimating the animals’ actual participation in war and the ways in which they collaborated in the making of history. Portraying them as passive victims of human abuses in the end ultimately affirms once again the power of the human over the animal. As Erica Fudge argues, “the history of animals cannot merely reflect upon past cruelties,” for laying bare these atrocities does nothing to read history against the grain of human centrality (2002a: 12). The history of animals can certainly acknowledge this suffering, but it must also contextualize these losses by connecting them to the animals’ own ways of life, their relationships to their surrounding world, and recuperate their presence and connection to the larger narratives of an otherwise all-too-human history.

Carrier pigeons, for example, did indeed do their work whilst flying past shellfire, poison gas, German snipers, and birds of prey. And, they were often maimed and killed as a result of these risks. However, framing their participation as either an instinctive selflessness, tragic sacrifice, or appalling abuse does little to further our understanding of the extent of their efforts. For regardless of human attempts to maintain control over them, once these birds were in flight, they eluded human authority, returning to the human world all the same. There is room here to imagine these pigeons were not merely responding to a natural instinct or human demands, but responding to their training, improvising in and adapting to challenging situations, and pursuing their own shifting interests.

Considering carrier pigeons within the context of military history has thus far been unsatisfying. Communication studies, however, offers a promising alternative space to negotiate the pigeon into history. Animals were vital to the prosecution of war. They figured as a kind of *technē*: technologies and techniques that were valuable because they surpassed human capabilities. They were deployed for their supra-human perceptual, sensory, and communicative capacities, their energies, their mobilities, and their affects. They may have been conscripted as vehicles, tools, or instruments for human use but carrier pigeons were not merely passive energetic resources that fueled the war. They were active collaborators, working with humans and other animals, and other technologies as well. The carrier pigeon was a vital node in the larger networks of coordination and action of war, thanks largely to their receptivity to breeding and rigorous training techniques, and their ability to “home” even in the most hostile of places.

VIII. The Protean and Perennial Pigeon: Mutable Forms, Mutable Functions

Pigeons are protean. They have lived wild, domesticated, and feral and have adapted to thrive everywhere except Antarctica. They show incredible genetic variability; this particular quality was after all what inspired Charles Darwin's theory of natural selection, which he included in *The Origin of Species* (1859). While the domesticated pigeon exists in a seemingly endless diversity of forms, all pigeons descended from the same ancestor, the rock dove, *Columba livia*. To an extent, their variability is the result of human intervention. In the 19th century especially, pigeons became truly mutable, and subject to relentless genetic manipulation (Jerolmack 2007: 77). However, this mutability is just as much a consequence of the pigeon's amenability to transformation. The successful genetic manipulation of the pigeon is likewise a testament to the bird's own flexibility and resilience, qualities cultivated from its living history of adapting to and thriving in dangerous and unfamiliar environments.

In a semantic sense, pigeons are equally mutable. They have enjoyed and endured fluctuating cultural connotations, which are themselves contingent upon their changing roles in society. Pigeons for example, are also doves. While they are often understood as different animals, this is a baseless social construction (Jerolmack 2007: 78). Dove is sometimes used to refer to smaller pigeons with white coloring, but biologically they are the same bird. Any perceived differences are purely a consequence of their cultural signification, which currently sees doves as symbols of love and peace, and pigeons as signs of pestilence and filth.

Pigeons, thanks mainly to the feral population, are now mostly deemed non-native pests. As a result, they have been shot, gassed, electrocuted, poisoned, trapped,

and fed contraceptives in order to control their numbers (Jerolmack 2008:72). Concerted efforts are made to make city spaces unfriendly and inhospitable to them: building ledges and potential perches are covered in spikes and sticky gel to deter them, and in many places feeding pigeons is a punishable offense (Jerolmack 2008:72). These animals are criticized as “rats with wings” that bear diseases, destroy property, and generally diminish all of the places where they are found. This pigeon hatred is a relatively new phenomenon; for thousands of years pigeons were humans’ invited guests. Feral pigeons may be unwanted, but they exist in cities as a result of early symbiotic relationships with human beings. As the parameters of this relationship began to change, pigeons started to leave of their own volition, and humans also forced them out, either actively or simply by neglect (Patent 1997: 13; Jerolmack 2007: 78).

Columba livia is an old species. Pigeons have been around for at least 300,000 years (Blechman 9). They are also one of the oldest domesticated animals—second only to dogs. Pigeons are old, but so too are the techniques of pigeon keeping, also called pigeon fancying. People have practiced the art and science of pigeon breeding and keeping as long as pigeons have been domesticated. This love and care for pigeons was partly instrumental, since the bird provided food and other material resources. The bird provisioned not only a means of survival, but was also a source of entertainment and aesthetic pleasure, a go-to for religious practices, and eventually, a manner for communication.

Pigeons were the very first birds to be domesticated, well before chickens, at least 5000 years ago in Mesopotamia (Blechman 11). However, there is some evidence that they lived alongside humans as early as 10 000 years ago (Blechman 10; Johnston and Janiga 1995: 6). They became more intimate with humans around the same time that we

domesticated cereals and grains in the alluvial plains of the Tigris and Euphrates from 8000 BCE (Hansell and Hansell 39). Since wild rock doves were accustomed to feeding on the seeds of coastal grasses, they were efficient ground feeders and feasted on whatever did not make it to our granaries (Wynne 144; Blechman 10). While they traditionally lived on the rocky ledges of sea cliffs, the rock pigeon took favourably to the nooks and crannies of caves and early human homes, particularly with the added food incentive. As Stephen Budiansky writes, domestication is more than an outcome of captive breeding by humans. Rather it was equally initiated by animals and their need to survive by adapting to increasingly inhospitable environments ([1992] 1999). From the earliest of human times in any case, pigeons and humans have dwelled together.

Regardless of who made the first gesture, humans and pigeons enjoyed a symbiotic relationship. Dwelling with humans, pigeons had consistent access to shelter, and an abundance of food. Living with pigeons, humans had access to food, medicine, fertilizer, and other materials (Allen 88, 91). Pigeon meat was a staple, and their blood was often used for its healing properties. Pigeon feces or *guano* was extremely nitrogen rich, and therefore useful for newly emerging agriculture (Jerolmack 2007: 79). Pigeon feathers and down provided material for pillows, blankets, and insulation (Allen 100). Pigeons were also valued offerings in ritual sacrifices: as seed-eating birds, they were deemed clean enough to be used in religious ceremonies (Levi [1965] 1996: 13). In addition, they also provided bait and decoys in falconry (Hansell and Hansell 9). Not to mention, they were popularly used for entertainments such as pigeon racing.

Pigeons were incredibly valuable to humans for the above reasons, but also because of their temperaments. Pigeons were docile and gregarious, and surrendered easily to capture. They were accessible and did not need to be hunted. They were also

plentiful. They became known for their “reproductive magic” because they could breed quickly and more often than many other animals (Jerolmack 2007: 79). Their large numbers are also due to the fact that pigeons usually keep two nests going at the same time. A single pair of pigeons can produce fifty pigeons in a year (Allen 32). In addition to being placid and plentiful, pigeons were also highly esteemed for the particularities of their ways of life.

That they were domesticated during the agricultural revolution is timely. The shift from hunting and gathering to farming brought about radical changes to human social organization. Human populations increased as did settlements and densities, while new hierarchies developed in tandem with the growing concern with private property, which not only led to anxieties about food security, but also a greater preoccupation with monogamy and paternity certainty (see for example Ryan and Jethà 2010). Pigeons maintain strong relationships to their homes, are prone to monogamous pairing, and share parental duties like nest building, brooding, and feeding (Allen 30-2). As such, they became attractive models of home-making, matrimonial fidelity, and prosperity, and thus embodied values highly regarded by newly emerging human cultures.

In the ultimate gesture of hospitality, humans eventually began to build houses for their pigeons, called “dovecotes.” Such structures varied from crude clay pots to large, ornate and often beautiful buildings, all of which are the subject of Peter and Jean Hansell’s comprehensive and richly illustrated *Doves and Dovecotes* (1988). The first recorded dovecotes were in Ancient Rome, but they were prolific throughout the Middle East, Africa, and eventually continental Europe. There, many dovecotes still stand; some

have become official heritage sites, while others have fallen into disrepair (Hansell and Hansell 40-46).

Domesticating pigeons involves a particular kind of artfulness—so writes the 18th Century naturalist George-Louis Leclerc, Comte de Buffon. In order to encourage pigeons to remain with humans, he writes,

we must erect a lofty building, well covered without and fitted up with numerous cells. They really are not domestics like dogs and horses; or prisoners like fowls: they are rather voluntary captives, transient guests who continue to reside in the dwellings assigned them only because they like it and are pleased with the situation which affords abundance of food, and all the conveniences and comforts of life. (qtd. in Hansell and Hansell 39)

Pigeons, as Leclerc points out, were “transient guests”: as much as they belonged to humans that kept them, the birds nonetheless maintained a certain level of sovereignty. As this excerpt illustrates, keeping pigeons required concerted techniques of seduction, artful gestures, and improvised modifications that tried to appeal to the pigeons’ needs, desires, and satisfactions. As Hansell and Hansell note, humans devised various ploys and enticements to appeal to the pigeons, which were “capricious creatures and liable to desert a new home for another” (56). They were offered food and grits, while various herbs and spices were also placed in the dovecotes, and on the birds themselves, as a means to bind them to their homes (Hansell and Hansell 56-7). Keeping pigeons in such close quarters eventually led to more knowledge about them and their capabilities, not the least of which was the bird’s peculiar ability to return home after long distances.

IX. On the Uniqueness of the Homing Pigeon

Many migratory birds can navigate, but few can “home” like the homing pigeon. While domestic pigeons do exhibit the ability to “home,” homing pigeons, or “homers”

have been selectively bred and specially trained to hone their ability to return home across long and unfamiliar distances. For this reason, homers are the bird often deployed for communication purposes. In this capacity they are called “carrier pigeons” or “messenger pigeons.”⁵² Homing pigeons are also popularly deployed in the sport of pigeon racing, where they are called “racing pigeons,” or “racing homers.”

Homing pigeons have a highly developed homing instinct; they can find their way home even when they seem to have little information about their relational distance or direction. They are somehow able to use orientation as well as navigation. They figure out their location in relation to their home, and then select and maintain their course back to it (Walcott 21). It is still not known how exactly pigeons are able to accomplish this feat. It has primarily been thought to be a result of visual cues because pigeons have excellent eyesight—a 340-degree field of vision (Allen 25). They are also able to detect ultraviolet light from the sun even on the cloudiest of days, and are very sensitive to polarized light (Allen 26-27).

But countless experiments have shown that even when vision is compromised, birds are still able to home. As of yet, researchers have not been able to locate the specific sensory-perceptual cue that pigeons rely on to find their way. There have been a wide variety of suggestions that they use the position of the sun, polarized light, olfactory maps, magnetic fields, visual landmarks, or infrasound (Walcott 25). Charles Walcott argues that the uncertainty likely means that homing pigeons use a variety of

⁵² Passenger pigeons are often confused with these pigeons, but this is a separate species, now extinct. They constitute one of the most infamous cases of extinction in history (and are currently being considered as candidates for de-extinction). A ubiquitous bird, its population plummeted at a very high rate not simply as a result of being overhunted, but because of the conditions that facilitated overhunting: the technologies and techniques of communication and transportation that enabled hunters to locate, catch, and kill them with unprecedented efficiency (Greenberg 2014).

different cues, a combination of a few or all, which are additionally contingent upon the particularities of their home loft, its location, and the site and circumstances of their release (25).

This indeterminacy also suggests that the homing instinct might be more improvisational than conventionally thought. Instinct, as Brian Massumi proposes by way of Raymond Ruyer, is not simply a stereotyped sequence of predetermined actions that function solely as a reflex. If that were the case, then instinct would not be able to respond to spontaneous changes in the environment. Chance variations in the environment must be matched by behavioural variation, Massumi writes (13). Without variation and improvisation, instinct would be so rigid as to be maladaptive. Thus instinct requires “a certain creative plasticity, an improvisational margin of maneuver” (Massumi 13). In this way, the homing instinct can be seen as an achievement, not something corporeally hardwired, but something openly creative, that is enacted in tandem with the singularities of a given event.

The persistent and mysterious ability to home is, however, not the bird’s only strong suit. Homing pigeons can also fly with great speed and impressive endurance. They have strong wings and can go from 0-50 km per hour in mere seconds (Allen 25). They fly incredibly long distances. They are known to fly on average over 800 km in a day, at speeds upwards of 100 km per hour (Blechman 5). Under certain conditions, they can fly even longer: the longest pigeon race involved a flight of 1800 km (Walcott 21). They can do this without stopping for rest, food, or water. They do not tire easily. And of course, like all birds, their avian respiratory system allow their blood to carry more oxygen than other mammals (Allen 25). These unique navigational abilities contributed to the bird’s increased domestication for instrumental ends, eventually

leading to their geographic proliferation, and the implementation of a variety of different kinds of pigeon communication networks.

X. Ancient and Medieval Pigeon Communication

Pigeons have consistently figured as messengers throughout history. In the biblical book of *Genesis* it was a pigeon that Noah released from the Ark to find land; the bird returned with good news in the form of an olive branch (Allen 63). The prophet Mohammed was said to have a personal dove, an oracle that whispered into his ear (Wynne 145). Meanwhile, the dove came to represent the Holy Spirit in Christian mythology, the divine force that acts as an agent of communication (Allen 69-70). Whether such imaginings were inspired by or preceded the actual use of homing pigeons as messengers, is not known.

Ancient seafarers were probably the first to capitalize on the pigeon's ability to home. Pigeons dislike open ocean: therefore, a bird released from a ship at sea will always fly inland. For this reason, pigeons became ideal for ship to shore communications (Blechman 11). Ancient Phoenician and Egyptian sailors for example, would release pigeons to deliver news of their impending arrival, and to announce their catch (Allen 105). Egyptians were known to release pigeons in the four cardinal directions carrying announcements of new pharaohs, and sent pigeons up and down the Nile with messages about the river's water levels (Blechman 11). The Romans meanwhile, used pigeons to announce victories at the amphitheatre (Allen 103). In ancient Greece, poets recounted stories of lovers sending messages by pigeon, and pigeons delivered the names of the winners of the first Olympic games to various city-states (Glover and Beaumont 9).

Pigeons were vital to early military communications; military strategies hinged upon the relay of signals and messages, and they often took place in extremely hostile conditions. While pigeons were not the only form of communication used (others included human runners, semaphores, and smoke signals), they were consistently used by all of the major historical super powers at some point or another (Blechman 12). Most notably, they were employed by King Solomon (970-930 BCE), Cyrus the Great (559-530 BCE), Alexander the Great (356-323 BCE), Hannibal (247-182 BCE), Julius Caesar (100-44 BCE), and Ghengis Khan (1162-1227 CE), who used a pigeon relay system to maintain an information network all across Asia and part of Europe (Allen 102; Woods 355). The Persians established pigeon lofts all across their Empire, sending the birds back to them from roving caravans in Africa (Levi [1941] 1963:29). Pigeons were a popular mode of communication in the East, but only re-awakened in the West when it was relearned from the infidels during the siege of Jerusalem in 1099 (Wynne 149).

Carrier pigeons were essential during the Crusades. Knights often carried them in their luggage, and the birds were used to relay news such as the fall of Constantinople in 1204 (Allen 103-4). In fact, the crusaders brought many pigeons to Europe this way, and deployed them in elaborate networks. In Turkey during the 14th century, a pigeon relay system was made using pigeon towers spaced 40 miles apart. Messages were even sent in duplicate two hours later to ensure success (Allen 104). Despite these deployments, pigeons as a medium for communication petered out in the intervening years. They were however, reborn in the upheavals of the industrial revolution and incorporated into more sophisticated systems of communication.

XI. Pigeons Travel by Train to Meet the Telegraph: Rothschild, Reuters, and the New Information Economy (1832-51)

an English paper especially plumes itself and rests its reputation upon being well informed upon every subject of news. As soon as any event is announced in any quarter of the world, no matter how far distant, a correspondent is immediately despatched [sic] to the scene of action, well qualified for the duty and well paid for his services. At his disposal are placed steam-packets, pigeons, *estafettes* [mounted couriers], post-horses, and steam-engines, and fortunate is the journal which can manage to be beforehand with its rivals in the receipt of intelligence.

—"The Wonders of the English Press," *The American Penny Magazine and Family Newspaper* (1845: 538).

Beginning in the 19th century, the involvement of carrier pigeons deepened and became more elaborate; they became a shifting node in a complex network of communication and transportation. Not only did they carry messages in this network, they were also carried by it. At the same time, they contributed to its materialization: giving it structure, shape, and substance. It was no coincidence that carrier pigeons emerged again just as train and telegraph systems were being developed across Europe. This was a time of innovation and experimentation, of evaluating possibilities and limits. Carrier pigeons were invariably part of these excursions.

It is worth noting that the stone edifices that comprised the optical telegraph that began to appear in the late 18th century, bear a canny architectural resemblance to dovecotes or pigeon towers (see Fig. 4.1 and 4.2). This is merely an anecdotal observation of course, but it hints that there may be an even a correlation or a deeper relationship between the arts of pigeon keeping and technological tinkering.

Technological infrastructures, such as those belonging to the telegraph, were not fully established overnight: there remained many gaps in service. Those who kept pigeons turned to their felicitous flock. As such, pigeons were employed as an interim solution to these limitation, carrying information where the telegraph could not reach.



Fig. 4.1 (L): Dovecote at Wroxton Abbey Gardens, UK, built 1745. Source: wroxtonabbey.org

Fig. 4.2 (R): A replica of Claude Chappe's Semaphore Tower on Liler Mountain near Nalbach, Germany. Photo by Lokilech. Source: Wikipedia.

Apothecaries, such as Julius Neubronner's father in Cronberg, Germany, often employed pigeons to facilitate better medical care. Neubronner would provide doctors with pigeons so that they could send prescriptions back to him. Neubronner would have the medicine ready by the time they were to be picked up ("The Spy Pigeon and His Work in War" 30). Meanwhile, in the realm of finance, the prominent Rothschild family made ample use of their private homing pigeon network to relay vital information for their burgeoning merchant banking empire. In fact, it was a homing pigeon that delivered the news of Napoleon's defeat at Waterloo to the Rothschilds in London, well before the English government even knew about it. This information would also give them a competitive edge at the Exchange (Blume 2004; Read 1999; "The Spy Pigeon and His Work in War" 1916).

Carrier pigeons worked in conjunction with the telegraph: they were an important stopgap in the communication infrastructure, and were essential to the circulation of information. As such they contributed to the establishment and success of many early news agencies such as Agence France-Presse. Between 1832 and 1845 Charles Havas, the founder of Agence France-Presse enlisted pigeons to carry news across the English Channel between Paris and London (Read 6). His former employee, Julius Reuter, also recruited pigeons to develop his Reuters news consortium, now one of the world's largest (Blechman 30-1). Reuter used pigeons to supplement the information gap between Paris and Brussels, as well as the larger gap between Brussels and Aachen, Germany. His pigeons were assigned to him by an Aachen pigeon-breeder who initially provided 45 birds, but eventually signed over 200 of them to Reuter's service (Read 11).

The carrier pigeon was vital to the movement of information across space, but the telegraph was equally essential, in combination with the train. The carrier pigeon is after all, a one-way messaging service since the birds only fly in one direction: toward home. Thus for carrier pigeons to function effectively, they needed to be transported quickly and efficiently away from home first, in order to fly by back home with the sought after information. Reuter's initial system for example, required twelve birds, which were to be always available at the Brussels location. This meant that all birds that were dispatched to Aachen had to be returned to Brussels by train every single day (Read 11). Messages were put in tiny bags, and tied to the birds' wings. The birds then left Brussels for their loft in Aachen. Once they arrived, the messages were taken out, put into a box and sealed. Then, they were carried by boy runners to Reuter's office where the messages were translated into telegraphese and taken to the telegraph office for transmission to

Berlin (Read 11). The network was indebted just as much to the train and the telegraph as it was to the birds' themselves.

At this time, the homing pigeon operated more effectively than it had in pre-modern periods. While pigeons increased the functionality of the telegraph and the train, these technologies also likewise increased the efficacy of the pigeon network. Eventually, however, as the infrastructures of the train and the telegraph—which often overlapped—developed and expanded, carrier pigeons began to be phased out. They were in the end a stopgap, a temporary fix for a developing network. It was not until their deployment during the Franco-Prussian war that they enjoyed a revival in popularity, again as an essential actor in an elaborate arrangement of communication and transportation.

XII. Pigeons Travel by Air Balloon with Microfilm to Meet a Magic Lantern: “Les Pigeons Voyageurs” During the Siege of Paris (1870-71)

Pigeons proved indispensable to the French when Paris was under siege during the Franco-Prussian war (1870-1). When the Prussians annexed the city, the normal channels of communication into and out of Paris were interrupted immediately. Telegraph wires were cut, not just those overhead, but also those submerged in the Seine (Hayhurst 1970). Couriers attempted to carry letters back and forth, but it was inefficient and dangerous work (Hayhurst 1970). It was nearly impossible for Paris to send or receive messages outside the city. Parisians began to send letters outwards by balloon, but this was imprecise and communication could not be effectively returned by balloon either.

The only reliable method to deliver messages into the city was with the help of homing pigeons. Pigeons were placed in boxes and flown out of the city in the air balloons. Once the pigeons made it to Tours, France they were fed, allowed to rest, and then laden with messages before they were released to take their journey back to Paris. Tours was 200 km from Paris so to reduce the flight distance the pigeons were sometimes taken by train as close to Paris as was safe (Hayhurst 1970). At the beginning of the siege, messages were written on paper and then rolled up and tied to the pigeons' tail feathers (Allen 108). However, paper messages were not ideal. They could be damaged, and because they could only contain so much text, their storage was limited.

René Dagrón was hired to implement the microphotographic technique as a space saving measure. It was successfully put into practice after a couple of months into the siege. Messages were eventually photographed, shrunk down, and developed onto microfilm, which expanded the carrying capacity of each pigeon substantially. One tiny piece of collodium could contain as many as 2,500 messages (Osman 14). Once received at their destination, the microphotographs were projected with a magic lantern onto a screen. Their contents were copied down by scribes and then delivered to their intended recipients (Wynne 151). The messaging system eventually expanded to include London where the British General Post Office sent the pigeons back. Pigeons relayed over one million messages over Prussian lines during that time (Jerolmack 2007: 83). It was reported that 40,000 messages were received on just one day (Jerolmack 2007: 83; Woods 355).⁵³

⁵³ Microphotography saved so much space, that French authorities allowed it for personal correspondences—for a small fee. Homing pigeons, or as they are called in French, “les pigeons voyageurs” could carry messages between Paris and England, but they had to be written clearly in French, be within a certain word limit, and sent by registered mail to Tours, where they were photographed, alongside hundreds of other messages that were then shrunk and sent off by pigeon (Wynne 152).

What is significant about the mobilization of the homing pigeon during the Franco-Prussian War was that the way it was embedded in an even larger technological constellation. Not only did it implicate the telegraph and the train, it also involved photographic and proto-cinematic technologies, such as the camera, microphotography, microfilms, magic lanterns, and by the low-tech transportation system of the hot-air balloon. Together, the homing pigeon and these technologies and techniques worked as a unique ad hoc animal-technical assemblage. On their own, these various technologies would have been insufficient; together they constituted a provisional, relatively successful but impressively coordinated communication system.

Over three hundred pigeons were dispatched for Paris throughout the war, but only fifty-nine successfully made it back there. This is thought to be a result of poor weather conditions, for the siege of Paris took place in the winter (Wynne 152). The Prussians also tried to intercept the birds by deploying hawks to hunt them (Allen 109). However, the pigeons were also not well trained. As 20th century seasoned pigeoneer Lt.-Col. A. H. Osman reminds, at this time the carrier pigeon was strictly an emergency service wherein untrained birds were called upon unexpectedly (16). Many of the pigeons deployed during the 1870-1 Siege came from regional pigeon lofts outside Paris; their training was hasty, and limited at best. And without proper practice and continued training throughout the Siege, even the performance of the best pigeons would suffer. Still, the pigeons did good work, which did not go unnoticed. The French dedicated a monument to them, designed by Frédéric-Auguste Bartholdi (the designer of the Statue of Liberty) at the Porte des Ternes in Neuilly in 1906 (Lawrence 2010).⁵⁴

⁵⁴ It was destroyed by the Germans in 1944 when they occupied Paris (Wynne 152).

But homing pigeons did not only make an impression on the French. The deployment of pigeons during the Franco-Prussian war attracted considerable attention from the world. It indicated the potential for homing pigeons to be an effective emergency messaging service particularly for the military. It also demonstrated the need for better, more systematic training. Homing pigeons performed reasonably well during the Franco-Prussian War, but had they been better trained they may have excelled. Their mobilization during this war galvanized countries all across continental Europe to establish working Pigeon Services (Jerolmack 2007: 83). Pigeon breeding advanced, while official military pigeon lofts were set up in Germany, France, Belgium, Italy, Portugal, Austria, Russia, Switzerland, Denmark, Sweden, and Canada (Woods 355). Pigeons were also used in the Second Boer War (1899-1900) during the siege of Ladysmith to carry important information in and out of the garrison (Gardiner 98).

By the end of the 19th century, then, the Western world had become increasingly enthusiastic about the potential military applications for homing pigeons. Their homing abilities, speed, strength, and their endurance, in combination with their small size and docility made them a reliable and efficient means of communication during conflicts. They could be very useful in rugged terrains where ground transport was precarious or the laying of wires was not possible. Their generally resilient nature suggested they could become accustomed to even the harshest conditions on the frontlines of battle. Of course, the bird's innate abilities alone, while impressive, were not enough to sustain a dedicated, consistently reliable network. Rigorous training was required, in addition to a whole host of material and technical supports.

As countries across Europe and North America were fortifying their pigeon service, Great Britain was lagging behind. In his 1899 article, "Homing Pigeons in War-

Time,” General J. Larner observed with great anxiety the great pigeon divide.

Remarking that while other countries across continental Europe had established pigeon programs (see Fig. 4.3), the British had yet to catch up. “How long must we wait until our pigeon system rivals those of the Continental Powers?” he complained, and called Britain’s neglect of the homing pigeon “manifestly foolish” (Larner 818, 815). For if conflicts were to ever arise, a functioning carrier pigeon network would be crucial.

In the event of a war, Britain could borrow homers from local pigeon flyers, but the concern was that these birds would not be sufficiently trained (Larner 816). An intensive training regimen was needed as well as established techniques, and a set of best practices. In addition, what was also required was a proper infrastructure that incorporated both communication and transportation technologies, as well as additional pigeon-related housing and accessories. In order to use carrier pigeons optimally for greater dissemination of information, lofts would need to be built on different parts of the coast, but also at telegraphic communication headquarters (Larner 817). Thus to use carrier pigeons effectively involved planning and meeting important requirements, which were eventually strategically addressed during the following Great Wars.



Fig. 4.3 A map of military pigeon loft locations in Europe as of 1890
Source: "Homing Pigeons in War-Time" (Larner 818).

XIII. The Great Wars: Assembling the Modern Carrier Pigeon Network

Pigeon-based communication networks had been mostly formed ad hoc up until the 20th century. By WWI a more systematic approach to homing pigeons was already underway; it continued to develop during the war, and well into WWII. In the combined wars, carrier pigeons were deployed at an unprecedented scale by Great Britain, continental Europe as well as Canada and the US. Special military units were established with trained pigeon handlers, called pigeoneers. Training schedules were developed and material supports and accessories were devised, manuals were published and diligently implemented.

Eventually, by WWII, homing pigeons were trained to do things they had never done before. That is, fly at night, return to mobile lofts in changing locations, and fly between primary and secondary homes. The homing pigeon by this time had become a full-service, mobile, two-way means of communication. These are major modifications; up until this point communicating with pigeons had been limited to daytime, fixed locations, and one-way deliveries. In this way, homing pigeons can be understood as caught up in the imaginative possibilities of technology, and thus implicated in the processes of technological change.

At the outbreak of WWI, the British were one of the only European Allied nations that did not have dedicated military pigeon service, as Gen. Larner had predicted back in 1899. But pigeons proved necessary for them once the war got underway. The Germans had effectively prepared their pigeon service, which was very disconcerting for Britain (Osman 24). As such they had to catch up as quickly as possible.⁵⁵ Efforts were made to procure only the best pigeon breeds, which was done through pigeon breeders. Local pigeon fanciers and hobbyists volunteered their birds—an estimated 100,000 (Hansell and Hansell 20). Pigeons were trained, and employed on the home front, and were finally sent to the front lines by March 1916 (Allen 11). Britain bolstered their Pigeon Service to such an extent that by the end of the WWI, they had 22,000 pigeons in service and 400 pigeoneers dedicated to work with the pigeons (McCafferty 2002: 11). The Americans, meanwhile, did not have their own pigeon service. When entered the war in 1917 they realized they could not do without one. As such, they had to borrow birds and their accessories from the British, while also availing themselves of Britain's

⁵⁵ Britain actually made pigeon flying illegal, for fear of German espionage and required pigeon owners to clip their wings (Hansell and Hansell 20). Anyone who wished to carry homing pigeons had to have a special permit issued by police (Osman xiii).

expertise, advice, and training manuals. Eventually they managed to get their own service off the ground (Osman 51-2).

Carrier pigeons are obviously of primary importance to any pigeon service, but they were ineffectual without the personnel that cared, trained, and deployed them. The establishment of a dedicated pigeon service meant acquiring and training the necessary skilled personnel. They needed to be well versed in optimal breeding techniques, feeding regimens, and rigorous training schedules. Pigeoneers were in charge of bringing pigeons wherever they were needed, carrying them through trenches, barbed wire, and shellfire on foot, bicycle, horse, or automobile. They were equally responsible for maintaining and distributing the pigeons' auxiliary equipment between combat lofts on the front lines to the message centres at the rear. They were in charge of delivering all messages received by pigeons to the message centre of the unit's headquarters. In addition, they also had to train other personnel to care, utilize, and release pigeons (*FM11-80* 4).

While pigeoneers could be taught with the help of training manuals, pamphlets and supervision by more experienced personnel, certain essential characteristics could not be taught. As the American Pigeon Service Field manual outlines, pigeoneers not only had to have expertise and knowledge about pigeons, it was also necessary that they be dependable, kind, patient, neat, and very observant in order to be excellent at their work (18-19). In short, pigeoneers needed to appreciate pigeons. It was enthusiasm that would facilitate the best sense of each pigeons' disposition and behavior, and estimate how well they will fare in certain conditions in order to deploy them as effectively as possible. As such, often the ideal pigeoneers were those men who were already pigeon fanciers even before the war. This was most certainly the case on the home front. Col.

Osman recognized the value of pigeon hobbyists: during WWI he set up a volunteer service by approaching seasoned pigeon fanciers. He requested that they keep their pigeons well trained on the condition that if the enemy landed they would have to put on their uniforms and fight (23).

Homing pigeons as a means of communication required institutional support and skilled professionals, with tried and tested training techniques. But they also required social acceptance from the public; attempts were made to cultivate a culture of respect for the pigeon. Homing pigeons are fallible and vulnerable, thus they required protection. Because of food scarcity during the war, there were concerns that pigeons would be killed and eaten. On the home front edicts were put into place to prevent pigeons from being shot. "Killing, wounding or molesting homing pigeons" was punishable by imprisonment or a hefty fine, according to the Defense of the Realm Act regulations during WWI (Gardiner 100). On the front lines, this edict was also enforced. A newsreel released by the War Office featured a telegram message sent by Capt. H. Dickinson on October 31, 1917 that read, "Please do not shoot homing pigeons. They are performing valuable national work" ("War Office Official Topical Budget 324-1").

In addition to policies set in place to protect pigeons, a whole host of techniques and special accessories were designed and implemented to keep them safe. Pigeons, as mortal beings, are vulnerable to countless threats from shellfire, enemy snipers, predators, fog, and inclement weather, smoke, and gas. The American field manual for the pigeon service describes the various weapons used for the defense of pigeons, particularly from predators, like opportunistic rats in the trenches, or birds of prey like hawks or falcons (13).

During poisonous gas attacks, pigeons were put in uniquely designed bags to safeguard them from the fumes (Gardiner 100). These also allowed soldiers to affix messages to the pigeons while they were inside the box, without subjecting the bird to fumes (see Fig. 4.4). Special stabilizing harnesses were designed to immobilize the birds and keep them well secured inside their panniers during transport on tanks, bicycles, and airplanes (see Fig. 4.5). Pigeons were dispatched in variously sized containers and crates. These often required additional accessories such as parachutes (see Fig. 4.7) to ensure the safety of pigeons during landing in the event of an attack.



Fig. 4.4. Gas protection container for homing pigeons during WWI. Photo by 2nd Lt. David McLellan, Aug. 31, 1918. Source: Imperial War Museum, Ministry of Information First World War Official Collection (Q 9288).



Fig. 4.5 French homing pigeons secured in their traveling baskets, ready for deployment. Source: Imperial War Museum, Waley A (Major) Collection (Q 55233).



Fig. 4.6 Pigeon parachute used by British during WWI. Source: Imperial War Museum (COM 928).

In addition to pigeons, pigeoneers, and an array of techniques and accessories, the carrier pigeon also required a stable material infrastructure for circulation, one that also encouraged interoperability across all branches of the military—army, navy, and air forces—for combat and intelligence (Osman 1928). The most important components of this infrastructure were the home lofts. After all, homing pigeons require homes in order to do their work. Traditionally these lofts were stationary; pigeons were transported away only to return to the same place every time. These stationary lofts were primarily reserved for long distance birds, and were typically located near message centres that housed telegraphs, telephones, or wireless (Nicol 288).

In the field, a commander would write a message, give it to an officer from the Royal Engineers Signal Service, who would then attach the message to the leg of a pigeon and toss it into the air. The pigeon would then fly back to its home loft. When the pigeon landed it would activate a lever, complete the circuit, and trigger the sound of a bell. The Signal Service soldier would be alerted that a message had arrived. He would go to the loft, remove the message from the pigeon's canister, read it, and then pass it on by telegraph, telephone, or a personal messenger to whoever required the

information (Gardiner 99). Hungry after its journey, the bird would also be fed (Osman 27).

Not all lofts were stationary however. Mobile lofts were a significant development during WWI. That is, lofts that could be moved between different locations, to accommodate the contingencies of warfare. Pigeons would return to them regardless of the shift in their geographical location. Mobile lofts did not replace stationary lofts; both were used but for different purposes, with different pigeons. These lofts were mounted onto trailers or automobiles (Wynne 153) (See Fig. 4.7). Mobile lofts were reserved for breeding and stock, but they were also largely used to house young pigeons deployed for short distance communication in the field (FM 11-80 14-16). These were reserved specifically designated for “mobile” pigeons. During training the lofts are moved frequently to prevent the crystallization of location fixation (Nicol 290). Thus unlike stationary pigeons, they used the lofts themselves to find their way back, regardless of their location or the particularities of the terrain. They were able to find their way back even if the loft was longer in the same place it was previously.⁵⁶



Fig. 4.7. Homing pigeons housed in mobile loft, R. E. Signals Pigeon Camp, Sept. 11, 1917. Source: Imperial War Museum, Royal Engineers Collection (Q 29539).

⁵⁶ Mobile lofts were also camouflaged, and sometimes physically integrated into the trenches. Mobility was hampered as a result of the poor ground conditions during WWI. Mobile lofts ended up being used much more extensively in WWII.

Getting a pigeon to “home” to assigned locations is not an effortless endeavor and involves a great deal of care, hospitality, and training. It is necessary to create an attractive home for the birds, one to which they will be motivated to return. Since pigeons adopt a home loft by the time they are about 6 weeks of age, it is critical to ensure the pigeon develops a strong relationship to its home as soon as possible. This is cultivated through scheduled exercises, releasing pigeons and then encouraging them to return at particular intervals. How long a pigeon should be at its home and away from it, as well as when it should be fed and bathed were important considerations for ensuring the pigeons were as attached to their home as possible (Alter 2014).

For home to be desirable, it needed to be associated with several key things: food, water, salt and grit (essential for the bird’s digestion); and it must be a place to bathe, a place to roost (with each bird choosing its own particular perch in the loft), and a place for protection (Nicol 291). Thus to imprint the home on the pigeon involves secure structural design to suggest safety and defense, and a comfortable place to rest with its mate. Pigeons bond very strongly to their mates and offspring so the presence of their family, or the promise of it is also a significant motivator. Behavior is thus conditioned using a particular reward schedule based on all of these elements.

In addition to providing favourable lofts to which the homing pigeons would return, it was also necessary to have various means to transport the pigeons away from the lofts. Because pigeons need to be taken away from their home in order to allow communication to take place, they are heavily dependent upon forms of transportation, whether by air, ground, or water. The first Allied pigeons were sent out on ships and minesweepers to enable ship to shore communications, where wireless was not available (Nicol 288). Even when not expressly placed on ships, homing pigeons sometimes

ended up there. As Osman recounts, “many birds in distress take refuge for the night on the friendly mast or deck of a trawler and being brought to land on completion of the cruise in the morning, they are liberated with a message accounting for their absence” (21). Of course, the birds were more likely to survive if they crossed paths with those who were familiar with or sympathetic to pigeons.

On the ground they traveled on the backs of soldiers either by foot, or on motorcycles or bicycles (see Fig. 4.8). They were also loaded into automobiles, and strapped to horses or dogs (see Fig.4.9). They were a common presence in tanks. During WWI, tanks were provisioned with pigeons, and their own dedicated pigeoneer (Alter 2014). In the sky, they accompanied soldiers on RAF bombers and other aircrafts. They were taken along as a contingency, in the event of failure or distress (See Fig. 4.10). Or, they were launched in mid-air to report back on the progress of air missions.



Fig. 4.8: Pigeons inside 4-chambered basket are strapped to the back of a Motorcyclist of the Royal Engineers (signals) to be taken to the Front line. Photo by 2nd Lt. David McLellan, June 2, 1918. Source: Imperial War Museum, Ministry of Information First World War Official Collection (Q 8898).



Fig. 4.9: Two Canadian soldiers strap a basket containing carrier pigeons to the back of a dog during a training exercise, 1940. Source: Imperial War Museum, Ministry of Information Second World War Official Collection (D 442).

WWI marked an increasingly mobile and modular carrier pigeon network with the development of mobile lofts. However, WWII cultivated this mobility and flexibility even further. First, militaries began training pigeons to fly at night. Homing pigeons are naturally day-flyers. Their eyesight is poor in low light conditions: as such it is incredibly difficult to train them to fly in the dark. Training involves the gradual release of pigeons into darkness at increasing distances, beginning at twilight. Other methods included housing the birds in a darkened loft in the day. Trainers would then rely on electric lights to illuminate the inside of the loft at night to acclimatize the birds to the time shift. Eventually when they are released at night, their loft must also be illuminated to help the birds see it from above on their return (Nicol 295). This new affordance of carrier pigeon communication however still meant that the birds would be slower to return, due to their limited visibility (Nicol 295).

Second, and most significantly, some pigeons learned to return to two homes, thus optimizing the pigeon service for two-way-communication (Nicol 290). This was a dramatic achievement at the time and it was a closely guarded secret (Teale 49). The training involved dividing up and distributing the rewards that the loft typically

represents, parsing them between two locations, such as putting family in one and food in the other. Still, one loft was required to be primary and stationary. The secondary loft would be a mobile loft or basket. The bird would be brought to this secondary location and consistently fed there. Once the bird began to associate the basket with food, they are released from their lofts, and immediately fly toward the basket (Nicol 295).



Fig. 4.10 Royal Air Force crewmen handling containers of carrier pigeons at St. Eval, Cornwall, after a patrol over the Bay of Biscay. Source: Imperial War Museum, Air Ministry Second World War Official Collection (CH 12364).

These new capabilities, while impressive, were mutually exclusive. That is, stationary birds would only fly back to stationary lofts, and mobile birds to mobile ones. One-way communication birds could not become two-way communicators and vice versa. Night-flyers could only fly at night and could not also fly to mobile lofts, nor could they be trained for two-way communication (Nicol 295). Furthermore, they could only travel short distances, and were also considerably slower than other birds. Thus these new proficiencies typically came at the cost of other affordances. As much as the pigeon is malleable, it nevertheless resists certain modifications.

XIV. The Pigeon-Shape of Communication

Carrier pigeons were not just a means of communication but a kind of communication. They were not appropriate for every situation, and when they were used, they did not merely establish a neutral link between people and places, it gave meaning to that link. Communication by carrier pigeon, for example, was situational; pigeoneers had to recognize when it was appropriate. The “Carrier Pigeons in War” pamphlet distributed to soldiers in WWI, instructs that when deciding whether or not to send a pigeon, it is necessary to consider: (a) the importance of the message; (b) the number of birds available at the time; (c) how soon the dispatched birds could be replaced; and (d) whether the message can be sent by any other means (Alter 2014). If a message was especially important, two copies were to be sent, but only when sufficient birds were available (Alter 2014). Duplicate messages were carried by different birds, often one male and one female, and released at different intervals to ensure they did not fly together and get waylaid (Gardiner 100). Pigeons were precious. There was nothing cavalier or effortless about launching a pigeon into the air. To do so was not only to risk squandering the bird’s life, but the huge investment of labour and energy that accompanied each bird.

Whatever the pigeons were entrusted with was integral to the communication between the front lines of battle and the rear. Such sensitive information was essential to the coordinated movement of soldiers, and had a direct bearing on military strategies. As such, communications sent by carrier pigeons were to be done with the utmost care. The pamphlet further emphasizes this: “Messages should be legible: should be written in a clear hand, care being taken to fill in all the particulars as required by the form” (1918). Such messages included everything from map overlays, reports from

reconnaissance units, staff reports, airplane pilot status updates, and navy unit updates (*FM11-80*: 2-3). Any content that arrived by carrier pigeon was very important. Thus, the very sight of an air borne carrier pigeon advancing was meaningful in and of itself, well before the message has been opened and read.

In this way, the carrier pigeon did not simply facilitate connections, it also gave meaningful shape to those connections. They defined the messages they carried but they were also significant even when they did not carry any messages at all. Planes were encouraged to always be equipped with a dedicated homing pigeon in the event of a disaster. Pigeons accompanied most airplane pilots in the aerodrome (Osman 31). Thus, a pigeon arriving on its own without a message—bearing just its numbered leg tag, was recognized as a signal of distress sent out by that particular plane (Alter 2014).

To reiterate, homing pigeons did not simply carry the content of human communication. Rather than simply supporting links between people and information across space, they also qualified the nature of that link. That is, they gave it form, texture, and meaning. They constituted communication. They highlighted the physicality that energizes the process of communication, drawing attention not just inward to the messages it carried, but also outwards to the singularly situated conditions in which it was deployed. They made use of pre-existing dimensions of communication, but they also brought into being novel dimensions of communication, making new aspects of communication thinkable and possible.

Carrier pigeons were not always used to send intelligence; they also opened up additional possibilities for gathering information. Pigeons were dropped from planes into friendly areas on the off chance of getting otherwise unanticipated information from Allied soldiers below (Allen 110). Other times they were let go over enemy-

occupied areas in an effort to establish connections with potential sympathizers and resistance movements (Hansell and Hansell 21; Jerolmack 2007: 84). Pigeons were placed individually in containers that were affixed with tiny parachutes. Inside each container was also a bag of corn, propaganda, as well as messages requesting information about the Germans, and promises of rewards (Hansell and Hansell 21). These missions were of great risk to the pigeons because their lives depended on someone finding them. If they landed unnoticed, they would die in the confines of their parachutes. It is speculated that only ten percent of them were ever returned (Hansell and Hansell 21).

Such instances could easily be construed as wasteful, given just how valuable pigeons were. At the time, however, the potential benefits must have appeared to outweigh the risks. After all, the Germans did treat these infiltrations as a serious threat. They were so alarmed by the success of this program, Osman alleges, that they proclaimed that any German found opening such baskets would be severely punished. The Germans set traps to catch any traitors who might have been tempted to avail of the Allied pigeons, by removing the pigeon and replacing it with one of their own (Osman 47). In addition, pigeons were sometimes used as a means of counterintelligence by both sides with Germans sending bogus messages back to the Allies and vice versa (Osman 50).

In the early 20th century, carrier pigeons were also being deployed for topographic reconnaissance. Some pigeons were fitted with special miniature cameras to take automated aerial photographs of enemy or occupied territory (Gardiner 99). This was largely a German practice inspired in part by Julius Neubronner, the son of the

famous German pharmacist, who invented the pigeon-camera and patented it in 1903.⁵⁷ In 1909, *Popular Mechanics* predicted that such an invention would be very valuable during wartime, reporting that Germany was conducting a number of experiments wherein “the pigeon-photographers are carried in a portable loft which also contains a dark room in which the photographs are developed” (“Pigeons as Aerial Photographers” 211). By 1916, reports surfaced of felled or stunned pigeons that were found behind Allied lines, with tiny cameras strapped to their chests (“The Spy Pigeon and His Work in War” 31). In 1932, the Germans were training and fitting their birds with tiny automated cameras, capable of taking two hundred photos in one flight (“Carrier Pigeons Take Photos Automatically” 216). While soldiers in planes were also used for aerial photography, pigeons could fly closer to the ground, and do so more surreptitiously than planes.

Seeing the carrier pigeon with a camera flying alongside an airplane makes for a “strange medley,” an article in the January 1916 edition of *Popular Science* remarks. How odd it is to imagine, the article continues,

the air-ship, the last and most daring invention of man’s brain, rising in the early dawn to search and photograph the foe’s movements, and the graceful pigeon, so frequently mentioned in in the stories of early days, soaring perhaps at the same moment, to act as an aerial scout. (“The Spy Pigeon” 30)

The pigeon’s new role is borne of “modern ingenuity” it explains, claiming that it is the human imagination that has “added something to the older roles of the carrier pigeon—and has turned him into a photographer” (“The Spy Pigeon” 30). However, to the

⁵⁷ Neubronner was allegedly inspired to design the device after one of his pigeons was missing for a whole month, and he wondered if there might be a way to record where his pigeons went when they are not at home (“The Spy Pigeon and His Work in War” 30).

contrary, this new affordance was not simply added to the homing pigeon, but a possibility made thinkable thanks to the carrier pigeon. The knowledge about its capabilities made it viable to expand the process of communication to include aerial reconnaissance. No longer limited to the delivery of message from one point to another, communication came to be more broadly a dynamic process of attunement, and creative arrangements between bodies, materials, and environments.

The carrier pigeon's more-than-human capabilities inspired new kinds of deployments, and novel pigeon-technology combinations. For example, pigeons were being trained to guide missiles as a part of a classified initiative called "Project Pigeon." Beginning in 1940, the behavioural psychologist B.F. Skinner, prompted by pigeons' excellent vision and maneuverability, used operant conditioning to train them how to control the movement of missiles. He attempted this by encouraging them to peck at images projected on screens. Skinner worked on the project on his own, but eventually enlisted the help of engineers at General Mills Inc.

It was not until June 1943 that the work was validated by the Office of Scientific Research and Development at the Department of National Defense (Skinner 1960). They offered Skinner's team a modest contract for \$ 25,000 to develop the homing beacon in earnest (Lehman 2013). It was mobilized as an extension of the naval research laboratory ORCAN (Organic Control). Though Skinner spent years perfecting the system, it was never actually implemented (Wynne 155). These kinds of modifications to the pigeon's work, and the creation of new tasks and responsibilities for them are not simply feats of human ingenuity. Rather they are suggestive of the ways in which the carrier pigeon itself, as a way of being and getting on in the world, is implicated in the imaginative possibilities and the eventual material realities of communication.

XV. The Persistence of the Carrier Pigeon and the Myth of Obsolescence

Many militaries gradually phased out carrier pigeons following WWII. The US Army closed its pigeon program as early as 1957 (Blechman 38). The Swiss kept theirs going until 1994, when due to budget cuts they forced 30,000 pigeons into retirement (Kroon 1994). Keeping pigeons was simply too expensive; food, grit, housing, and hired personnel were not cheap, and the high cost of the pigeon's railroad fares during military training exercises did not help matters (Kroon 1994). Discontinuing the program was nevertheless met with consternation. Hans-Rudolf Fehrlin, a Swiss Army's Division Commander, argued that carrier pigeons remain useful to many modern military communications, which are vulnerable to interception or can be jammed by electronic countermeasures (qtd. in Kroon 1994). Their persistent post-war military use elsewhere certainly testifies to this.

In France, the country's Defense Ministry continues to operate Europe's last military dovecote, in Suresnes just west of Paris. One hundred and fifty birds make up their 8th regiment. The birds however, are not ranked as a strategic asset, which Jean-Pierre Decool, a member of France's National Assembly, sees as a major oversight. He advocates for developing the pigeon program since carrier pigeons, he maintains, are one of the country's "mightiest weapons" (Parussini 2012). Meanwhile, China still maintains a platoon of 50,000 birds with 1,100 trainers as a means of communication in border and coastal areas (Parussini 2012). In 2007, China also revealed it was implanting microelectrodes in the brains of pigeons to control the birds' movements for strategic purposes (Shachtman 2007). While carrier pigeons do not occupy centre stage in current military operations, they nonetheless remain at the ready in the sidelines.

Carrier pigeons have also persisted past WWII in non-military capacities. In the 1970s, the department of Haematology at the Freedom Fields Hospital in Plymouth, Devon used pigeons to ferry over blood samples from outlying areas to a central laboratory for testing (Allen 90). As of 2004, many remote regions in France were still using this method to carry blood samples (Blume 2004). Pigeons were also trained in a short-lived search-and-rescue operation in the US called “Project Sea Hunt,” which ended in 1983 due to financial limitations (U.S. Coast Guard). In the 1980s, the Lockheed Missile and Space Company enlisted the help of homing pigeons to deliver microfilm copies of graphic design projects to workers 30 miles away. Pigeons were deemed more efficient because they could bypass the circuitous mountain roads at a much faster rate than human courier. At the time, they were also much more efficient and affordable than Internet transmission (“Carrier Pigeons Ferrying Lockheed Microfilm” 1982).

Homing pigeons have also been embroiled in the illegal drug trade, espionage, prison smuggling, and political insurgency. In 2003 they were employed to carry heroin from Afghanistan to Pakistan (“Drug traffickers Use Carrier Pigeons” 2003). In 2008, Iranian officials arrested two homing pigeons wearing digital modifications near a uranium enrichment facility in the city of Kashan after suspecting them of spying (“Iran Arrests Pigeons ‘Spying’ on Nuclear Site” 2008). And it was discovered in 2009 that inmates at the Brazilian prison Danilo Pinheiro were depending on homing pigeons to help them smuggle in cell phones, and cell phone chargers (Lehman 2009). In 2012, homing pigeons assisted Syrian insurgents to communicate securely with other activists outside the city of Homs, which was under siege by the government of Bashar al-Assad.

Telecommunications were down, and many were without electricity (“Syrians Send Messages Via Carrier Pigeon in Homs 2012).

“The swan song of the carrier pigeon ... has just been sung by the U.S. navy,” an article announced in the February 1930 edition of *Popular Mechanics* (Miller 194). Surely at the time, in the wake of new technological developments, it was difficult to imagine the continued relevance of the pigeon. However, as this brief sketch suggests, the carrier pigeon has persisted in spite of and often largely because of emerging technologies. And yet, as the race between the carrier pigeon against the Internet that opened this chapter indicates, the bird’s obsolescence is still treated as an established fact. As this discussion has hopefully made clear, carrier pigeon is by no means a rudimentary form of communication. To assume it has been replaced by more advanced technologies is to fail to appreciate that the pigeon has been and continues to be deeply enmeshed in not just in the imaginary terrain of communication, but also in the complex physical and technological networks of communication and transportation.

XVI. Conclusion: Communication’s Feathered Edges

The encounter between the carrier pigeon and the Internet from which this chapter began has provided an opportunity to examine more closely the carrier pigeon’s long relationship with modern communication infrastructure. I have tried to show that it has been, since the 19th century especially, a perennial participant in the communication landscape. It has persisted as a symbol and a technological analog, but more importantly, as an essential material and mobile support for communication. It was a valuable stopgap, and a means of circumventing communicative challenges. The carrier pigeon not only physically matters to communication, but it is also bound up

with how we imagine communication's possibilities. The carrier pigeon is not just a pigeon, nor is it just a vehicle. It is a way, a creative process, and a generative technique that is materially situated within a larger context of relationships. Attending to the carrier pigeon as a means of communication therefore encourages an acknowledgement of communication as a material process and an artful form that requires variable movements to fill in shifting gaps in that materiality.

On this note, thinking about the carrier pigeon and its involvement in communication has provided an occasion to defer questions of internalities and content, of encoding and decoding meaning, to examine externalities instead. That is, communication's material forms and surfaces, its spatial arrangements, the movements in between, and the kinds of encounters and relationships such choreographies create and make possible. Acknowledging the fundamental materiality and movement of communication has also illustrated that communication is not something that merely happens; it is not effortless. Forging connections involves substantial effort and considerable organization and coordination. The human fantasy of faithful messengers that stoically bear the burden of our biddings is just that, a fantasy. In reality, communication is a sprawling process, it takes an assemblage, and it takes work.

The reappearance of the carrier pigeon in modernity—that it is even identified as a reappearance at all—testifies to the fact that what the carrier pigeon does remain pressingly unacknowledged. The truth of the matter is we should be well acquainted with the carrier pigeon by now. Its presence is hardly an intrusion from the past, but instead a persistence of what remains eternally present: the stubborn physicality, the lively energy, and movement of communication. No matter how attractive our cloudy

immaterial metaphors for communication are, the physical supports and their labours cannot be done away with.

Modernity, Marshall Berman claims, makes the world a volatile place, one where “all that is solid melts into air” (13). It makes sense that we would turn to the pigeon at this time, a bird that segues with impressive equanimity between solid and air, earth and sky, home and universe. Though the process of modernity makes the world increasingly tumultuous, unrecognizable, and often inhospitable, the pigeon still manages to find a place to belong. In this way, the carrier pigeon is inarguably modern. To be modern, Berman claims, is to become a subject and object of transformation; it is to struggle not only to make sense and meaning of these transformations, but also to make oneself at home among them. His definition, Berman admits, is deliberately broad in order to be as inclusive as possible. He hoped that the concept of modernity might encapsulate a vital shared experience. That is, an “experience of space and time, of the self and others, of life’s possibilities and perils—that is shared by men and women all over the world today” (Berman 15). But to be truly inclusive and open, we need to make space for non-humans in this crucible we call modernity as well.

The carrier pigeon presents a compelling case for this. As Anthony Judge notes, the bird constitutes one of the few species that can be understood as sticking with us despite all of our disruptions to its environment (2013). It is resilient, thanks in large part to its attunement to the world, and its ability to adapt accordingly. But by including the carrier pigeon in this “vital” experience of modernity, what becomes even clearer is that modernity is just another term for the essential instability of life. No living thing has the luxury of living in a world made wholly of their own design: life is conditional on the techniques used to make the world livable anyway. Bruno Latour argues that we

have never been modern; but by opening up Berman's definition, we might equally proclaim that we have *always been* modern. And more importantly, this proverbial "we" is not limited to the human.

Examining the carrier pigeon as a means of communication, then, illuminates that what communication ultimately involves is not a privileged process that transpires between human beings. Rather it involves a fundamental, materially situated relationship between bodies and worlds, and the movements that unfold in the middle of these encounters. More than an exemplar of human artfulness and ingenuity, the carrier pigeon is a testament to artfulness and ingenuity as a distributed, vital, structuring force that is not reduced to human form. As the world constantly unmakes itself, bodies, materials, and their techniques struggle to remake it. The moves with which we confront and become attuned to the world's changes, and the techniques we use to fashion accommodations for our possible lives: these are the ways of doing that define communication.

Conclusion

Ending in the Middle of Things: Animal Moorings in the Digital Sublime

the ‘communication sublime,’ an awe-inspiring and immensely tantalising vision of a final and universally accessible communication space where the accumulation and dissemination of information stands for the most important condition of human progress, and where there can be no misunderstanding.

—Imar de Vries, from *Tantalisingly Close: An Archaeology of Communication Desires in Discourses of Mobile Wireless Media* (17-18).

the oceanic feeling [...] is a feeling, then, of being indissolubly bound up with and belonging to the whole of the world outside oneself [...]

The role of the oceanic feeling [is] to restore unlimited narcissism.
—Sigmund Freud, from *Civilization and Its Discontents* (4, 10).

I. Flotsam and Jetsam: The Materiality of Liquid Modernity

This dissertation would not have been possible without the unique landscape of the new media environment, and the network that holds it all together. Without the Internet, these animal encounters would likely have never come to my attention. As Florian Leitner notes, there is a paradigm of fluidity governing the organization of the global digital network (275). This fluidity is auspicious: it allows for unlikely phenomenon to be lapped up together and strewn haphazardly and unexpectedly onto the foreshores of perception. Fluidity characterizes the outward dynamics of the new media environment: the ebb and flow of different elements arranging and rearranging around contingencies and strange dynamics.

The peculiar convergences between animals and media that comprise this floating cultural debris certainly excite curiosity. However, they are interesting not so much because of what they are, but rather where they have come from and how exactly

they came to be. These digital, and especially visual artifacts, Leitner remarks, “arouse our interest because of a movement that does not take place onscreen.” They are suggestive of a more substantial movement; one characterized by a travelling through the Internet (274-5). Fleitner traces this movement in “Turtle Finds Lost Camera” (Paul Schultz, USA, 2010) an accidental animal video made under even more curious circumstances than “octopus steals my video camera,” discussed in Chapter 2.

The visual pleasure of this particular video—and its kin—he suggests, is not limited to the moving images it presents onscreen. It emerges much more powerfully from the way its singular images allow us to move with them. Not only as they are carried by ocean currents or by the gestural inelegance of an animal, but especially as they materialize in and circulate widely throughout the Internet.

This video’s images and their meanings are as intangible and fluid as the ocean in which animal and camera are suspended. He insists, however, that the movement they offer is also an illusion: “because in fact nothing is being moved—there is only a transmittal of information” (269; 275). But, as it should be clear by now, the transmission of information is indeed a moving, material, and tangible process. The aesthetic surface of the web might emphasize an alluring structuring motif of fluidity, of distributed creation, of unpredictable dynamics, but this a human phenomenological experience, and a psychological inclination toward the sublime.⁵⁸

For there is, despite this felt fluidity, an irrevocable dimension of solidity: to the ocean, to the images, and the network in which they circulate. Such free-floating images

⁵⁸ See for example discussions of the digital communication sublime in Imar de Vries’s *Tantalisingly Close: An Archaeology of Communication Desires in Discourses of Mobile Wireless Media* (2012), Vincent Mosco’s *Digital Sublime: Myth, Power, and Cyberspace*, or the electrical sublime in David Nye’s *American Technological Sublime* (1994) and Leo Marx’s *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964 [2000]).

are in reality anchored to an elaborate material topology, one that includes the millions of microbes that thicken the sea, and the complex undersea network of fiber-optic cables (Starosielski 2015).⁵⁹ While this very important fact often eludes our everyday awareness, it is just another condition of existence for the barnacles, sponges, and other marine life that connect and cling to these cables or the sharks that gnaw on them.⁶⁰ “octopus steals my video camera,” borne of a pelagic *pas-de-deux* between an octopus and a camera, seems to have left the ocean in order to get on the Internet. However, in order to get on the Internet, it had to go back to the ocean—likely by way of the Southern Cross cable network nestled in a seabed near Auckland, New Zealand.

Our experiences of media are different than the reality of media. This dissertation has attempted to include animals and their speculative experiences as a way to highlight aspects of media that we neglect. Materiality is one of these more salient dimensions. Animal-media encounters are a way of emphasizing the mutual implication of fluidity and solidity, of materiality and immateriality. Indeed, the Internet is teeming with animals: from image macros, memes, videos, animated gifs, to offbeat news items and personal blog entries. Rather than solely an outcome of human interest in animals, this is the state of things, because in fact, the world is teeming with animals. The Internet is part of that world, not a virtual media space that rests on top of it. In the throes of animal-media encounters, media—hardware, software, or infrastructure—become reflexive sites where that material implication is persistently and actively addressed.

⁵⁹ See also Stefan Helmreich’s *Alien Ocean: Anthropological Voyages in Microbial Seas* (2009) for an original and highly compelling reconceptualization of the ocean as less an empty space inhabited by organisms, but a near solid slurry thick with microbial life.

⁶⁰ Google recently reported that sharks were attacking their undersea fiber-optic cables, which forced them to modify their design (Butler 2014). Reports of sharks attacking undersea cables, while rare, date back to 1987 after the shift from coaxial cables (Lewis 1987).

They are also occasions where we can not only learn about individual animals, the particularities of media, and the realities they both make, but the realities they have in fact been making for quite some time.

II. The Beginnings in the End

In the end, this project has attempted to make a formal acknowledgement of animal-media encounters, to show that they have been informally meeting and mingling for much longer than we care to admit. Accidental animal videos, the “Apps for Apes” project, and carrier pigeon races against the Internet all appear to be unique scenarios that potentially mark the beginning of new trends. However, they are in actuality continuations of much more extensive and involved relationships, with significant historical precedence.

An octopus absconding with a camera in mid-record and inadvertently making a movie announces the growing proximity between animals and cameras in the new media environment that has been escalating for some time. By emphasizing animal-camera confrontations as a requirement for the very production of animal imagery, these videos also elucidate the relationship between moving images and the worldly conditions that make them possible. Rather than demarcating a post-human, post-modern, post-cinematic sensibility, I argued, with the help of André Bazin’s realist ontology of cinema, that accidental animal videos offer something distinctly cinematic. They are a more consummate iteration of the world making itself in its own image. Accentuating the camera’s automatism, they are important reminders of the valuable more-than-human operations germane to cinema.

The staged encounters in the “Apps for Apes” project, meanwhile, are part of a long tradition. Not only of non-human ape enculturation, but also of humans attempting to communicate with non-human apes in captivity—using visual-gestural interfaces such as touchscreens especially. These interventions are invariably vexed; endemic to the development of modern western primatology, they are too difficult to disentangle from human epistemology. In addition, they are also tied to the troubling modern dream of communication as perfect, lossless exchange. In its effort to exteriorize interiors, this fantasy liquidates the other, and reduces all encounters to a transactional dialogue.

As a result, “Apps for Apes” mobilizes orangutans as insipient human subjects that bear important information about humans that can only be accessed through technology. The lack of success in these interventions, however, has led to additional considerations and developments of new and more appropriate designs. The orangutans’ own resistances illuminate that what is at stake in these interventions is not better communication, but more appropriate accommodation for invited non-human guests. Because they take place in captivity they make apparent the burden of responsibility, the necessary relational duties of care, and the significant role that technology and techniques play in this relationship.

Pitting carrier pigeons against the Internet, finally, is part of a long-running joke among Internet engineers and enthusiasts. Such stunts rely heavily on a significant misunderstanding and underestimation of the carrier pigeon. It is mistaken as merely an outcome of humans exploiting the bird’s mysterious homing ability, when in fact it involves a much more complex and dynamic assemblage of actors, technologies, and techniques. Likewise, its role in the larger history of communications has also been

ignored. Carrier pigeons have been remarkably involved in technological infrastructures of both communication and transportation not only since the Great Wars but at least as far back as the early 19th century. By acknowledging the importance of the carrier pigeon to the imagination and materialization of modern communications infrastructure, the bird becomes central to communication. It effectively illuminates that communication and transportation were never separate, that communication is irreversibly beholden to materiality and movement. And, that rather than an activity that transpires between human partners, is a more extensive process involving many actors.

These scenes involving non-human strangers are the outcome of a complex concatenation of events: by the time the Internet brought them to my attention, they had already transpired. In this discussion I have, then, tried to use their aesthetic particularities as the basis for more in depth speculations about their ontologies. That is, as an occasion to acknowledge the dynamic spatial and temporal relationships that contributed to their conditions of existence. Moving between the aesthetics and ontologies of animal-media encounters has been a tactic to produce animal histories and animal epistemologies of media.

Tending to precursors and antecedents is not meant to suggest that recent animal-media encounters are simply the inevitable outcome of previous contact. Rather it is a helpful way to re-emphasize and re-affirm that animals and media have been and continue to be substantially entangled. Animals are fundamentally implicated in the material and imaginative possibilities of media and communication. And media in the broadest sense of the term are constitutive of the multi-species processes of communication and world-making that are essential to accommodating life on earth.

III. The Goat Gets the Last Word

We got them
out of the house, established some sense

of order, or at least what we thought
was hierarchy. Outside, the goats
nuzzled each other, gently opening
doorways to another life.

-Allan Johnston, "Goats" (2009).

Closing by return is an effective rhetorical device; it is a chance, after considerable discussion, to look back at the beginning in a new way. With this in mind, I want to return to the birth of YouTube, to the first video ever uploaded there. Titled "Me at the Zoo" (Jawed Karim, USA, 2005), it is itself a return to another beginning: that of film-based motion pictures. It features company co-founder Jawed Karim addressing the camera, framed in a medium shot, while standing in front of an elephant enclosure at the San Diego Zoo. The video is brief, clocking in at a mere 18-seconds, and its content blasé and banal, significant only by virtue of being the first of its kind. "So here we are with the elephants," Karim announces, motioning behind him, while two trundling pachyderms stand in the background, eating hay, and throwing it around. "The cool thing about these guys," he continues, "is that they have really, really, really long trunks. And that's cool," before finishing matter-of-factly with, "And that's pretty much all there is to say."

As James L. Cahill points out, the video is a throwback to the birth of filmic motion pictures, which likewise developed in tandem with animal imagery and experiments in animal locomotion (266). Elephants, he also notes, are "avatars of memory" and make evocative symbols for YouTube's archival aspirations (266). At the same time, "Me at the Zoo" hearkens back to another memory of another captive

elephant from another film from motion pictures past: Edison's *Electrocuting an Elephant* (1903). In that film, Edison made a much more tragic pronouncement about elephant physiology. There was nothing cool about Topsy as she staggered under the fiery heat of alternating electrical current. Putting her to death onscreen, Edison also managed to push the representational limits of the emerging motion picture medium.

In this way, "Me at the Zoo" hardly seems to offer a paradigm shift from early film. In his remarks about the video, Dominic Pettman notes, "the *anthropos* continues to assert its privileged role" by speaking and gesturing over the animal, and over the image (207). But while *Electrocuting an Elephant* is steeped in a kind of animal melancholy and a discourse of morbidity, "Me at the Zoo" by contrast, bears signs of life, or Burt's "aesthetics of livingness" (2006). Such aesthetics, and tending to them, are central to the reinstatement of the animal and its exuberant presence in animal imagery. The elephants in "Me at the Zoo" introduce this aesthetic dimension, but it is an unseen goat that truly carries it to fruition.

Before Karim makes his closing statement, a goat quickly interjects from somewhere off screen, with a faint but discernible bleat that can be heard over the din of the zoo. Thanks to the opportune timing of this creaturely aside, it seems as though Karim's final utterance, "And that's pretty much all there is to say" is in reference to the goat's vocalization. The interruption is low and understated; it could easily be missed unless one is paying close attention. That split-second moment creates an opportunity to shift our attention away from the human speaker, and toward the animal. It is a way to give deference to the goat and let it have final "say" in the matter. What it says is, of course, unintelligible. However, it is not meaningless. That meaning is inaccessible to us, but it is not wholly inaccessible. Understanding is simply something that takes work;

it is sometimes achieved among familiars, but rarely among strangers. What matters in this instance, then, is not what the goat has said, but acknowledging that it has said anything at all.

Animal sounds, as Michel Chion notes, are often used in cinema as synonyms for silence (1994: 58). That is, they are reduced to mere markers of the absence of the human voice. In acknowledging the goat's presence as it is manifested in the sound of its "voice," it becomes *acousmatic*, a sound where the source is unseen. More so, it operates as a kind of *acousmêtre*, an *acousmatic* sound that becomes a character unto itself. Enigmatic, it is what Chion describes as "the voice that speaks over the image but is also forever on the verge of appearing in it" (1994: 129). Its relationship to the image is not simply as an off-screen observer but "a relationship of *possible inclusion*" (1999: 23; original emphasis). Identifying the goat as the *acousmêtre* grants it a position of plenitude, which allows its bleat to announce the pervasive, inevitable, and imminent presence of the animal. It is that call from the non-human other, daring us to count it in our world viewed, the world considered, because it is irrevocably part of the world lived.

Karim's insistence "that's all there is to say" is a way to shut down further inquiry, but the goat's bleat stands to challenge this closure. It insinuates a gap, an opening that leads outward, outside the frame of the screen and the frame of human perception, beyond the enclosure of the zoo, and even the enclosure of the human. The goat creates a passage toward other sensibilities and ways of articulating presence in the world, a passage made possible by the new medium of compressed digital video.

IV. Listening for and Looking at other Opportunities for Research

Incidentally, in the years since “Me at the Zoo,” bleating goats have become a popular Internet meme. Videos of goats vocalizing loudly, often in the likeness of humans, abound. YouTube is full of video mash-ups of popular music videos that have been edited and intercut with scenes of goats yelling. This phenomenon of goats vocalizing like humans is more than simply a human predilection to hear itself in the call of a goat. More importantly, it points to the fact that in the modality of sound, the differentiation between species becomes especially blurred.⁶¹ Likewise the difference between animal and machine can become equally indistinct. This is certainly the case with the lyrebird, which has been documented successfully mimicking the sounds of camera shutters, car alarms, chainsaws, and cell phone ringtones (BBC Earth, UK, 2009).

While this dissertation has primarily focused on animals and animal-media encounters in the visual field, animals and their relationships with media in the aural register offer a rich territory for future study. As a case in point, there are incidents where domesticated birds have served as primordial music playback and recording devices, well before the phonograph. In the 18th century, for example, music manuals under the rubric of “The Bird Fancier’s Delight” circulated with species-specific sheet music to be taught to particular birds. The manuals instructed bird keepers how to

⁶¹ For example, on Friday, September 4th at 7:15 pm in Brockville, Ontario, the police were dispatched to investigate a complaint they received about a woman crying out for help behind a restaurant in the city’s north-end (“Female Yelling” 2015). When they arrived, what they discovered inside the shed just rear of the building was not a woman in distress, but a bird. A restaurant employee had temporarily locked up a loquacious parrot while he went to work. Its vocalizations bore an uncanny similarity to human sounds.

encourage birds such as canaries and bullfinches to learn human songs. They would then be able to sing the songs inside the home (Angliss 2011).

From the enduring image of Nipper listening to “His Master’s Voice” over the phonograph, to the practice of playing music for cows either for their pleasure or for their productivity, performing music for domestic animals is a surprisingly popular practice (Godoy 2014). At present, there are also instance of animals that play their own music, such as Nora the piano cat, a grey tabby that freely plays the piano. She has even been a featured soloist with the Klaipeda Chamber Orchestra (Barnett 2009). Meanwhile, elephants at a sanctuary in Thailand readily participate in the Thai Elephant Orchestra by playing mostly percussion instruments. The ensemble has released 3 albums to date (“The Biggest Thing Out of Thailand” 2013). More than occasions for anthropomorphism, these are also opportunities to share common, mutually pleasurable sensory experience across species.

Animal-media encounters remain significant sites of reflexivity where we can learn about animals and media, and the worlds in which they live and operate. While the acoustic ecologies of such encounters are a potentially rich topic of study, the visual field also continues to be an accessible and productive place to examine these encounters. It is especially so because there is still much work to be done in the dismantling the animal-human divide. This ontological distinction is actively maintained in the aesthetics of the visual field.

As an offshoot of accidental animal videos, for example, there are an increasing number of altercations between animals and aerial drones with cameras. Accidental animal videos offer occasions where the camera slips temporarily out of human control. They create potent dis-correlated or non-subjective images that offer not only correctives

to human entitlement, but also illuminate that cinema is always constituted to a certain extent by a more-than-human perspective. Now, the growing prevalence of animal, vehicle, or drone mounted with cameras that are unattended or “unmanned” are exploring the limits and potentials of this more-than-human perspective. They likewise have their precursors. The matter of Neubronner’s homing pigeons saddled with cameras (as mentioned in Chapter 4), for example, raises an interesting question about the extent of avian involvement in the development of the aerial perspective or “bird’s eye view.” And while there is tremendous value in seeing from another point of view, at the same time, seeing with camera-mounted drones generates nascent ethical questions. Not only about the freedom to look without limits, but also the human responsibility for images, and the practices involved in making them.

This project examined sites where animals and media meet, but there are occasions worth examining where they do not just meet, but overlap in more intimate ways. The deployment of animals as media is one such example. Canaries are no longer used to test air quality in coalmines; they have since been replaced by digital sensors. However, animals are still currently involved in biosensing projects, or acting as sentinels for multi-species and environmental health.⁶² These projects and their historical contexts have been neglected, and would benefit from further attention beyond seeing these animals as mere tools for humans. This history seems especially pertinent, now that media are becoming increasingly animal-like. The designs and

⁶² Pigeon Air Patrol for example, a current co-project developed and maintained by Plume Labs and DigitasLBI, involves carrier pigeons affixed with tiny backpacks containing environmental sensors that measure air pollution in the city of London (Dillet 2016). Rats are also involved in similar sensing initiatives such as HeroRATS who are helping to detect the presence of abandoned landmines as well the Tuberculosis bacteria in humans, where other diagnostic tools are unavailable (Crew 2014).

functions of robots and drones are inspired by animals and animal locomotion, for example. Meanwhile, there is the matter of the growing sensitivity of everyday mobile devices like smartphones. These companion devices are increasingly sentient: location aware, and responsive to temperature, sound, light, and movement.

Besides “Apps for Apes” and its emerging app design, there are a flourishing number of examples of interventions taking place with animals around art, gameplay, and as mentioned above, music. It is a relatively unexplored area, and a wider historical context of accommodative designs meant to cultivate reciprocity between humans and animals would certainly help historically and theoretically situate projects like Hannah Wirman’s TOUCH Orangutan Gameplay Project, Clemens Driessen’s “Playing With Pigs,” and Natalie Jeremijenko’s OoZ projects. However, a more in depth study would also yield a better appreciation for the possibilities and limits of deploying technology for cross-species reciprocity.

And while pigeons are a perennial stopgap in communication infrastructure, there are other overlooked histories of animals as integral participants in infrastructure, like horses—such as The Pony Express in the U.S—as well as elephants and camels in non-Western nations. On a related note, thinking about animals and infrastructure is also an occasion to consider the issue of animals and mobility in other ways. The most obvious example is the emerging phenomenon of animal commuters. That is, where animals, domestic and feral, such as pigeons, dogs, coyotes and goats, are actively or inadvertently availing themselves of public transit. They are riding on subways, buses, and trains. These are valuable occasions to think animals not simply as passive road kill and victims of transportation infrastructure, but as potential users. This research might

contribute to more conscientious infrastructure designs that factor in animal mobilities, such as animal crossings, wildlife corridors like overpasses and underpasses.

V. The Return of the Human

Lastly, this dissertation has actively tried to exclude the human, to render it, at least for a time, peripheral. The purpose of such an exercise was not to diminish or devalue the human, but to mitigate the all too comfortable tendency we have toward anthropocentrism. Frequently the study of animals becomes the study of human-animal relationships. While these relationships are important and must be addressed, they are also characterized by such a pronounced asymmetry that the unchecked privilege and unquestioned entitlement of the human undermines our ability to consider the animal in an appropriate or generous way.

This exclusion of the human was meant to be temporary; it leaves the door open for it to come back in after it has had some distance and time to reflect and recalibrate. Upon our return it is important that we reconsider our place in these feral ecologies. We must take stock of what our responsibilities are to ourselves and to the worlds we make, but also to animals. However, not just to animals in general as a vague ontological category, but to animals in the particular, as they present themselves to our attention in the situated spaces that condition our encounters.

In the meantime, the rift between nature and culture, the animal and human still needs mending. These continued distinctions maintain a sacrificial logic, where the exploitation of nature and the animal are taken for granted as the inevitable outcome of human becoming. This mending does not entail only a dissolution of boundaries—which

often means extending the human estate—but establishing provisional touchstones. I have tried to show that media can provide such shared surfaces.

Considering animal encounters with media is one way to acknowledge that animal and human share a kindred artfulness, an artfulness of living. The techniques and technologies of animals may be prosaic, marvelous, or strange. But they share in likeness the ways and means that all of us employ to make a place for our possible lives. Living is not effortless; no one lives only in the world as it is found, not protozoa, earthworms, jellyfish, dolphins, or gorillas. Existence is always tasked with making a way, an errant movement outward to meet the inhospitable world. Together these movements constitute a creaturely catalog of different ways of world-making. Looking awry, we can catch glimpses of their traces as they are left behind on the surfaces we travail and traverse, impressed by the careful force of curious touch.

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