theories and methodologies

The Android and the Animal

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PIXAR'S ANIMATED FEATURE *WALL-E* (2008) REVOLVES AROUND A SENTIENT ROBOT, A SMALL TRASH COMPACTOR WHO FAITHFULLY CONTINUES his programmed duties seven hundred years into the future, after humans have long abandoned their polluted home planet. Landscaped into skyscrapers of compacted waste, Earth no longer seems to harbor any organic life other than a cockroach, Wall-E's only and constant friend. Similarly, in Mamoru Oshii's *Ghost in the Shell 2: Innocence* (2004; イノセンス), sequel to the groundbreaking first *Ghost in the Shell* anime, the love of the cyborg police officer Batou for his vanished colleague Motoko Kusanagi is surpassed only by the care and affection he displays for his pet basset hound. These films are two recent examples of works of science fiction in which the emergence of new kinds of humanoid consciousness in robots, cyborgs, or biotechnologically produced humans is accompanied by a renewed attention to animals. Why? In what ways does the presence of wild, domestic, genetically modified, or mechanical animals reshape the concerns about the human subject that are most centrally articulated, in many of these works, through technologically produced and reproduced human minds and bodies?

Fredric Jameson has argued that the representation of aliens, of their bodies, cultures, and societies, flourishes in anglophone science fiction in the 1960s and 1970s, while from the early 1980s on science fiction shifts

> from the classic or exotic alien to the representation of the alien other as the same, namely the android, whose differentiation from the earlier robot secures a necessarily humanoid form. This may be said to be the moment of a kind of Hegelian self-consciousness or reflexivity in the genre, in which our attention and preoccupation as readers turn inward, and meditate on the "android cogito," which is to say on the gap or flaw in the self as such. (141)

Jameson locates the moment of this transition in Ridley Scott's *Blade Runner* (1982), without commenting in this context on the film's

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https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

derivation from Philip K. Dick's novel *Do Androids Dream of Electric Sheep?* (1968) or on the longer science fiction tradition of technologically produced or copied humans that runs through Adolfo Bioy Casares's *La invención de Morel* (1940; "The Invention of Morel"), Aldous Huxley's *Brave New World* (1932), H. G. Wells's *The Island of Dr. Moreau* (1896), and ultimately back to Mary Shelley's *Frankenstein* (1818, 1831) and E. T. A. Hoffmann's "Der Sandmann" (1817; "The Sandman"). Considering this tradition does not invalidate Jameson's contention that the android, in much recent science fiction, takes over and transforms some of the structural functions of the alien in earlier texts. But it helps foreground the fact that some of the more complex recent novels and films do not ask questions about technologically modified human identities in relation to the robot or cyborg alone—as many classical texts tended to do[1]—but situate those questions in an expanded field of produced and reproduced bodies and minds that ranges from dolls, robots, and cyborgs to children and, quite prominently, animals. Instead of simply displacing the alien in favor of the android, in other words, recent science fiction structurally splits the figure of the alien into the android and the—often biologically altered, evolved, or cyborgized—animal.

If the issue of the animal in its relation to human identity has resurged in science fiction, it has also done so in cultural theory. The first wave of theorization surrounding the concept of posthumanism—the philosophical questioning of the centrality of the human—by such scholars as Donna Haraway and N. Katherine Hayles focused mainly on the figure of the cyborg and on machine-based forms of consciousness. More recently, the term has been used by theorists such as Cary Wolfe (*Animal Rites* and *Zoontologies*) and Barbara Herrnstein Smith to reconsider human identity in relation to the animal.[2] The rise of the field of animality studies in the broader context of literary and cultural scholarship is itself evidence of a shift in focus from emergent technologies to new questions about the relations among biological species. Haraway examined both dimensions even in her work of the 1980s, but she has complemented her most famous piece from that period, "Cyborg Manifesto" (1984), with *The Companion Species Manifesto* (2003), arguing that she has "come to see cyborgs as junior siblings in the much bigger, queer family of companion species, in which reproductive biotechnologies are generally a surprise" (11) and that "[c]yborgs and companion species each bring together the human and non-human, the organic and technological, carbon and silicon, freedom and structure, history and myth, the rich and the poor, the state and the subject, diversity and depletion, modernity and postmodernity, and nature and culture in unexpected ways" (4). This broad sweep may be too vague to establish a genuine conceptual bridge between machine and animal forms of consciousness, and Haraway moves rather too quickly from such generalities to the particularities of human-canine relations. Nevertheless, *The Companion Species Manifesto* succeeds in conveying the sense that a consideration of human identity as altered by contemporary technologies is no longer complete without a concurrent account of its relation to animal modes of being.

Reconsidering the functions of the alien in science fiction may clarify how and why this conjunction of android and animal manifests itself in recent texts. American science fiction, from *Star Trek* to Octavia Butler's Xenogenesis trilogy, has often cast the alien as a figure for class, racial, ethnic, national, or religious difference, with the implication that alienness is ultimately knowable and assimilable, given the right epistemological, political, and social conditions.[3] Science fiction writers outside the United States, by contrast, have also emphasized the radical unknowability of truly alien ecologies, biologies, and cultures.[4] But however it is epistemologically and socially construed, aliens' difference in many science

https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

fiction novels and films manifests itself concretely in their technological superiority and/or their physical resemblance to certain terrestrial animals, as innumerable sci-fi aliens modeled on insects, lizards, or cats demonstrate. To put it somewhat differently, aliens often present themselves as an amalgam of what one might refer to as emergent and residual dimensions of organic and cultural development (in Raymond Williams's terminology [40–42]). They embody, on one hand, humankind's possible technological futures and, on the other hand, forms of biology that in Western philosophy have often been associated with a past that needs to be superseded in order for authentic humanness to emerge.[5] By shifting its focus from the alien to the android or cyborg, recent science fiction emphatically places questions of technology at the core of the human self.[6] More than that: it embeds technology in the history of the species by making it the tool of human biological evolution. This turn is perhaps most obvious in the work of the cyberpunk novelist Bruce Sterling, who not only argued, in his preface to the pathbreaking anthology *Mirrorshades* (1986), that "[f]or the cyberpunks . . . technology is visceral. . . . [I]t is pervasive, utterly intimate. Not outside us, but next to us. Under our skin; often, inside our minds" (xiii) but also made biotechnology the prime engine of human evolution in his novel *Schismatrix* (1985). Relying on a vision of history derived from Ilya Prigogine's brand of chaos theory, which emphasizes complexification mechanisms, Sterling depicts a future humanity that, with the help of bioengineering and terraforming, explodes into multiple "posthuman" daughter clades (in Sterling's own words [109, 170]) with very different organic shapes and social structures: aliens with human roots.

But the trope of the android or cyborg, while it effectively reframed questions about advanced technologies, did not address issues of biological otherness that the figure of the alien had also raised—issues that, because of the rise of the environmentalist movement in the 1960s and 1970s, the emergence of animal rights advocacy in the 1970s and 1980s (Peter Singer's *Animal Liberation* appeared in 1975, Tom Regan's *Case for Animal Rights* in 1983), and mounting concern about decreasing biodiversity from the 1980s onward, moved ever closer to the center of public debate. Advances in gene research and biotechnology during the 1990s, most famously the realization of the old science fiction motif of cloning with the creation of the sheep Dolly in 1996, reinforced concerns about the role of the biological other in visions of human technological progress. If the mechanical, artificially evolved, or cyborgized animals in recent science fiction allude to such concerns, they nevertheless fulfill a narrative function different from that of biologically exotic aliens in earlier novels. One of the more conventional sci-fi plot patterns—undoubtedly influenced in no small measure by cold war geopolitical configurations—involves the unification of humankind across national, racial, and cultural boundaries in the face of alien contact or invasion. The arrival of the biological other, in such scenarios, forces humans to acknowledge their shared planetary habitat and species belonging. Aliens authenticate humanness by virtue of their biological difference, much as animals did before Darwinian theory blurred the boundaries between beast and man. Animals in recent science fiction offer no such sure touchstone of difference; products of human technology, they sometimes carry human genes or have become humans' intelligent equals. The assertion of human authenticity, in such contexts, becomes difficult or indirect and is often fraught with conceptual tensions. Some works propose a genuinely posthumanist perspective, in which human consciousness is portrayed as one mode of being among others, but most reaffirm a humanist perspective that only fits ironically or uneasily into sociobiological contexts that constantly destabilize it. In other words, while all the works

https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

presented in this essay portray posthuman contexts in the sense that they approach questions of species identity in a field of widely varying forms of technological and biological consciousness, not all are posthumanist in the sense that they ultimately distance themselves from an affirmation of human uniqueness.[7]

Dick's science fiction classic *Do Androids Dream of Electric Sheep?* juxtaposes "replicants" who can only be told apart from normal humans by means of sophisticated psychological tests with "electric" animals, lifelike but mechanical copies that can easily be identified by small switchplates hidden on their bodies. After Haraway's "Cyborg Manifesto," Dick was sometimes interpreted as suggesting a posthumanist acceptance of humans and replicants as equals, since his protagonist affirms the inherent value of electric animals toward the end of the novel. But, as I have argued in more detail elsewhere (71–74), Dick does not in fact postulate any simple parallelism between technologically produced humans and animals. Instead, he makes empathy and care for (real or artificial) animals a crucial criterion for distinguishing humans—characterized by awe and respect for animals in the novel's postatomic moment, in which real animals have become exceedingly rare—from replicants, who are shown mutilating or killing them. That the destruction of animals is an integral part of normal human behavior outside the novel may or may not be part of Dick's implicit social critique, but in the novel authentic humanness—a concept that the novel puts less in question than does *Blade Runner,* the film loosely based on it—is associated with biophilia.[8]

Cyberpunk novelists, indebted to Dick's work in many ways, tend to reflect on the role of animals less than Dick does. But moments such as that of a "disinterested robot bighorn pretending to munch lichen beside the illuminated waterfall" in the fake biotope atop a Manhattan hotel in William Gibson's *Mona Lisa Overdrive* (1988; 222) clearly hark back to Dick's electric sheep kept on the roofs of apartment buildings, as does, in a different way, Neal Stephenson's canine cyborg "Rat-thing" in *Snow Crash* (1993). Jonathan Lethem's postcyberpunk novel *Gun, with Occasional Music* (1994) develops Dick's animal vision in a more sustained fashion by way of a plot that echoes Dick's merger of noir detective mysteries with science fiction. A human PI, Conrad Metcalf, investigates a murder in the East Bay of San Francisco in a future populated by "babyheads," children whose development has been accelerated by means of "evolution therapy," and by animals who have attained human intelligence by the same means. Metcalf encounters animals at various crucial moments of his investigation: an evolved ewe, Dulcie, is brutally murdered (no doubt echoing the goat murdered by the replicant Rachael Rosen in *Do Androids*); the kangaroo Joey Castle works as hired muscle for a human underworld boss, whom he ultimately replaces; and the PI who was hired by Metcalf's murdered client to replace Metcalf himself turns out to be an evolved ape called Walter Surface, whose "face was human enough to look weary with trouble, creased with the contemplation of things most humans, let alone most apes, never see" (158).

If comments such as these, as well as the strategic doubling up of humans and animals in all the stereotypical roles of the murder mystery—victim, criminal, PI—indicate that Lethem aims at a thorough blurring of the boundary between human and animal, the novel nevertheless reaffirms that boundary in a surprising way. His human characters are even more psychologically and emotionally stunted than many of Raymond Chandler's, Dashiell Hammett's, or Dick's. Universal and legal drug use has increasingly incapacitated them from confronting reality on their own and induces such severe amnesia that by the end of the novel they have to rely on external memory boxes to recall their own lives (in heavily edited versions, needless to say). In ad-

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dition, Metcalf had his genital nerve endings switched with those of a female partner who has long since abandoned him, leaving him—in a manner reminiscent of Hemingway's Jake Barnes—something short of a "real man." The animal characters, while hardly vibrant with vitality, are less prone to such forms of decline and better adapted to their new social positions. After avenging Dulcie's death on her murderer, Joey Castle, Metcalf withdraws from this society by voluntarily seeking out another term in the deep freeze that replaces jail time in Lethem's future, mostly because he is tired of technologies that reduce humans to amnesiac hulls and deliver, instead of genuine life improvements, appliances that greet their users with pointless flourishes of music. Authentic humanness, this ending implies, can only sustain itself in the absolute rejection of a society in which animals have become more existentially complex than average humans.

Evolved animals also play a crucial role in other novels, such as Sheri S. Tepper's environmentally oriented *The Family Tree* (1997), in which the remote descendants of twentieth-century biotech lab animals—who, by a skillful narratological sleight of hand, are identifiable as nonhuman only when seen through human eyes well into the novel—dominate a diminished population of humans who are kept as work animals. This idea takes a different turn in Margaret Atwood's *Oryx and Crake* (2003), a vigorous indictment of contemporary technologies that targets everything from television, the Internet, and computer games to genetic engineering. Jimmy the Snowman, last survivor of the old humanity, finds himself in the role of instructor to a new species of humans, the Crakers, genetically engineered by his closest friend, the superbly gifted biologist Crake, to survive Crake's extermination of practically all humankind in an attempt to prevent ecological and social collapse. Atwood's critiques of commodity culture and scientific research remain on the whole schematic—the creative humanities scholar versus the reductive scientist, the enriching literary legacy versus the absurdities of television and the Internet, elitist corporations versus impoverished masses—and committed to a conventional humanism that values high culture as the true indicator of human achievement. Confirming this perspective, even the Crakers turn into humans rather than posthumans by the end of the novel, as their newly discovered ability for artistic representation—they have made an effigy of Jimmy during his absence—signals the emergence of just the kind of culture that Crake aimed to preclude in his genetic programming.

Yet it remains that the world at the end of the novel is inhabited by two human species rather than just one (Jimmy has discovered a handful of other survivors of his own kind), and the genome of one of them contains a wide variety of animal genes. Both species are surrounded by a natural world that abounds in the creations of Crake's and other biotech labs: for example, bioengineered plants and butterflies; spoat/giders, a cross between goats and spiders; rakunks, a cross between raccoons and skunks; and the extremely intelligent pigoons, pigs bred with cells from particular human donors so as to grow extra organs for future transplants. In flashbacks to his childhood at OrganInc, the company where his father worked as a genetic engineer, Jimmy remembers his close bonding with a rakunk his father gave him as a pet. He also recalls his visit to the company lunchroom, where "to set the queasy at ease, it was claimed that none of the defunct pigoons ended up as bacon and sausages: no one would want to eat an animal whose cells might be identical with at least some of their own" (23–24), although this rule might have been flouted in practice. Jimmy "didn't want to eat a pigoon, because he thought of the pigoons as creatures much like himself. Neither he nor they had a lot of say in what was going on" (24). Rakunks and pigoons go feral after the collapse of human civilization, and the pigoons in particular

https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

become Jimmy's fiercest and most dangerous antagonists in the struggle for his own and the Crakers' survival. Human cells and organs, in this scenario, are no longer contained in the two human species but also form part of nonhuman organisms, even as, conversely, nonhuman genes form part of the new humans. Atwood's affirmation that authentic humanness can be identified through culture, therefore, plays itself out in a context that is thoroughly posthuman in biological terms.

As these examples show, science fiction texts of the last four decades in which aliens have by and large been replaced by a combination of technologically modified humans and animals tend to articulate humanist perspectives that sit uneasily with the hybrid and clearly posthuman social and biological environments they portray. Such ambiguities also surface in other media. The television science fiction series *Dark Angel*, for example, focuses on "transgenic" subjects with superhuman abilities who have escaped from a government lab where they were trained as human weapons. But in its second season, as the lab is burned down and all its inmates freed by some of the androids, the series shifts more and more toward other experimental humans made with genes from dogs, lizards, and fish.[9] While animals as such do not appear, the overall sense *Dark Angel* conveys is once again that the figure of the android or cyborg needs to be supplemented by that of the animal, even though the series shortcircuits what insights might result from this tantalizing conjunction through a simplistic finale that assimilates all the varied android forms into an allegory of multiculturalism. Grant Morrison and Frank Quitely's graphic novel *We3* (2005) relies on a similar plot: three household pets—a dog, a cat, and a rabbit—are transformed into cyborg superweapons with incipient human-language abilities but are allowed to escape by the senior scientist when the government shuts the experiment down and orders the animals exterminated. The rabbit is killed in ensuing confrontations with security forces, but the dog and cat are rescued and reconverted into contented pets by a homeless man—an ending whose neatness and sentimentality create an odd tension with the darkness of the plot and the experimentalism of Quitely's visual style, which puts *We3* at the cutting edge of innovation in the genre.

The most complex and persuasive recent exploration of the android-animal relation is undoubtedly *Ghost in the Shell 2: Innocence*. Visually even more stunning than Morrison and Quitely's graphic novel, Oshii's anime reflects on the problematic of the android and cyborg with unsurpassed scope and philosophical depth. The plot revolves around a special police unit consisting of normal humans and armored cyborgs, humans so heavily enhanced by technology that their bodies may no longer be able to function without it. This unit is called on to investigate the mysterious murders of several individuals by "gynoids," female-appearing robots who should not normally be capable of such deeds. But this plot merely forms the backdrop for a wide-ranging reflection on the human self in the age of technology that alludes to texts and writers from the Bible, Dante, Descartes, and Milton to Auguste Villiers de l'Isle-Adam, Raymond Roussel, and the Golem legend. Thematically, the reflection ranges from dolls, robots, cyborgs, and digital forms of consciousness all the way to children, whom a cyborg coroner aptly named Haraway declares to be the result of the human desire to self-replicate in the same way as dolls and robots. Animals also feature prominently in this meditation. Most obviously, the unspoken affection of the protagonist, the armored cyborg Batou, for his former colleague, Major Motoko Kusanagi, whose body was destroyed at the end of the first *Ghost in the Shell* movie and whose mind ranges freely in the cybermatrix, is now complemented by the love he shows for his pet basset hound. At one turn

https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

of the plot, his meticulous care for the animal almost gets him killed, as his enemies manage to hack into his electronic brain in the store where they know he regularly goes to buy fresh food for his dog.

The bond between the mostly mechanical human and his pet is highlighted in a touching scene at Batou's home, during which we are shown a glimpse of the dog next to a wooden sculpture of the same species. Shortly afterward, the basset plays with a transparent toy sphere displaying a fish, a motif that is echoed later in a scene in which what looks at first like a globe of Earth starts displaying the face of an ape and then of Batou's dog, as if to indicate how the world of humans, who evolved from apelike ancestors, is dominated by the animal, even as humans have turned cyborg. The last image of the film, after a scene in which Batou's partner, Togusa, has returned home to his daughter and given her a doll for a present, shows Batou holding his dog in the same posture in which Togusa held his daughter. The image of cyborg and dog outlined against the nocturnal silhouette of a thoroughly urban and industrial landscape both echoes and inverts Dick's reflection on replicants and animals. As in Dick, the technologically enhanced human's ability to bond with the animal serves as a touchstone of humanity. But unlike Dick's androids, the cyborg here succeeds in establishing that bond, and the juxtaposition with the human family suggests that the film encourages the viewer to consider the ties of genealogy and those of biophilia as equivalent. Along with Sterling's *Schismatrix* and Tepper's *Family Tree*, therefore, Oshii's film comes closest among the works here discussed to suggesting a posthumanist perspective, in which human consciousness is not a priori set apart as unique. But *Innocence* goes beyond many other contemporary works in that it not only juxtaposes androids and animals but also considers human consciousness as part of a broad range of different forms of connection among bodies, consciousnesses, and representations—a range that includes dolls and robots on one end, children and animals on the other, and in the middle a variety of biotechnological hybrids and symbioses.

Notes

1. Wells's *Island of Dr. Moreau* might seem a partial exception, in that it focuses on the surgical transformation of animals into humans. While this process, both in its physical manifestation and in the fundamental alteration of the protagonist's view of normal humans it entails, fictionalizes cultural concerns about the evolutionary derivation of humans from animal ancestors prevalent in late-nineteenth-century Britain, it does not in the end lead to any sustained consideration of humans' and animals' coexistence and their shared entanglement in technological progress.

2. Smith's posthumanism differs substantially from Wolfe's and criticizes some of his basic assumptions.

3. For a detailed discussion of the problems associated with figuring differences among humans as differences among species, see Michaels.

4. The novels *Eden* (1959) and *Solaris* (1961), by Polish science fiction writer Stanislaw Lem, thematize the difficulty and perhaps impossibility of understanding the genuinely alien. Jameson discusses this "unknowability thesis" in his *Archaeologies of the Future* (107–18).

5. As Wolfe has shown, this dissocation from the animal lies at the root of dominant Western concepts of human uniqueness (*Animal Rites* 6–7).

6. Science fiction places technology at the core of the human self *again*, one should perhaps add, in view of texts such as *Frankenstein*, *Brave New World*, and *La invención de Morel*, all of which insistently raise questions about the constitution of the self from technology. Given this tradition, we might ask whether the emphasis on aliens in the American pulp tradition and the novels it generated in the 1960s and 1970s constitutes an exception rather than the rule in the genre.

7. I take the distinction between "posthuman" and "posthumanist" perspectives from Wolfe (*Animal Rites* 5–6).

8. The term is Edward O. Wilson's, though I use it here in a slightly broader sense than his: while Wilson refers mostly to humans' evolutionarily conditioned predisposition to acquire knowledge about other species, my usage is intended to include a more pronounced affective component.

9. I am grateful to Elena Tajima Creef for discussing this shift with me.

https://doi.org/10.1632/pmla.2009.124.2.503 Published online by Cambridge University Press

Works Cited

Atwood, Margaret. *Oryx and Crake*. New York: Anchor, 2003. Print.

Dark Angel. By James Cameron and Charles H. Eglee. FOX, 3 Oct. 2000–3 May 2002. Television.

Dick, Philip K. *Do Androids Dream of Electric Sheep?* 1968. New York: Del Rey–Ballantine, 1996. Print.

Ghost in the Shell 2: Innocence. Dir. Mamoru Oshii. Production I.G., 2004. Film.

Gibson, William. *Mona Lisa Overdrive*. New York: Bantam, 1988. Print.

Haraway, Donna J. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Chicago: Prickly Paradigm, 2003. Print.

———. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century." *Simians, Cyborgs, and Women: The Reinvention of Nature*. 1984. New York: Routledge, 1991. 149–81. Print.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: U of Chicago P, 1999. Print.

Heise, Ursula K. "From Extinction to Electronics: Dead Frogs, Live Dinosaurs, and Electric Sheep." Wolfe, *Zoontologies* 59–81.

Jameson, Fredric. *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*. London: Verso, 2005. Print.

Lethem, Jonathan. *Gun, with Occasional Music*. New York: Doherty, 1994. Print.

Michaels, Walter Benn. "Political Science Fictions." *New Literary History* 31 (2000): 649–64. Print.

Morrison, Grant, writer, and Frank Quitely, artist. *We3*. New York: DC Comics, 2005. Print.

Smith, Barbara Herrnstein. "Animal Relatives, Difficult Relations." *Differences* 15.1 (2004): 1–23. Print.

Stephenson, Neal. *Snow Crash*. New York: Bantam, 1993. Print.

Sterling, Bruce. Preface. *Mirrorshades: The Cyberpunk Anthology*. Ed. Sterling. New York: Ace, 1986. ix–xvi. Print.

———. *Schismatrix*. 1985. New York: Ace, 1996. Print.

Tepper, Sheri S. *The Family Tree*. New York: Avon, 1997. Print.

Wall-E. Dir. Andrew Stanton. Disney; Pixar, 2008. Film.

Williams, Raymond. *Culture and Materialism*. London: Verso, 2005. Print.

Wilson, Edward O. *Biophilia*. Cambridge: Harvard UP, 1984. Print.

Wolfe, Cary. *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory*. Chicago: U of Chicago P, 2003. Print.

———, ed. *Zoontologies: The Question of the Animal*. Minneapolis: U of Minnesota P, 2003. Print.

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