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Dogs and Technology: Our Most Beloved Companions in Twentieth and Twenty-First Century America

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Dogs and Technology

Our Most Beloved Companions in

Twentieth and Twenty-First Century America

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A Thesis

Presented to

the Faculty of Arts and Humanities

University of Denver

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

Claire V. Bow

June 2010

Advisor Christopher Coleman

ACKNOWLEDGEMENTS ::

Roux (Rhodesian ridgeback dog) &
Droid Eris (mobile phone by HTC)

ABSTRACT ::

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Title: DOGS & TECHNOLOGY: *Our Most Beloved Companions in Twentieth and Twenty-First Century America*
Advisor: Christopher Coleman
Degree Date: June 2010

Since the suburban rush and steep rise in household technological devices in the mid-twentieth century, Americans have drawn apart from each other, a shift that has coincided with a rise in both dog ownership and the adoption of handheld mobile devices. This paper argues that these phenomena, which are both ubiquitous and intimate in many American households, reflect one of the most basic and static human needs: the need for emotional connection. Furthermore, it is the unique combination of canine and digital elements that replace human-to-human social networks; networks that were once both literally and figuratively tightly drawn. In the plainest terms, handheld devices endow people with powers of digital communication, thereby infolding them into a cybernetic social network. Meanwhile, it falls to dogs to provide a physical embodiment of a more immediate and tactile connection. Drawing from a wide base of existing research and literature, both in the realm of human/technological and human/canine relationships, this paper seeks to draw new conclusions about how we interact with our devices and our dogs and what this might say about who we are.

TABLE OF CONTENTS ::

CHAPTER ONE :: *Introduction*

Since the suburban rush and steep rise in household technological devices in the mid-twentieth century, Americans have drawn apart from each other, a shift that has coincided with a rise in both dog ownership and the adoption of handheld mobile devices. This paper argues that these phenomena, which are both ubiquitous and intimate in many American households, reflect one of the most basic and static human needs: the need for emotional connection. Furthermore, it is the unique combination of canine and digital elements that replace human-to-human social networks; networks that were once both literally and figuratively tightly drawn. In the plainest terms, handheld devices endow people with powers of digital communication, thereby infolding them into a cybernetic social network. Meanwhile, it falls to dogs to provide a physical embodiment of a more immediate and tactile connection. In the most complicated terms, the human/digital/canine relationship in its many iterations is fraught with seemingly contradictory nuances, surprising connections, and theoretically diverse approaches. Drawing from a wide base of existing research and literature, both in the realm of human/technological and human/canine relationships, this paper seeks

to draw new conclusions about how we interact with our devices and our dogs and what this might say about who we are.

Because many of the pivotal terms in this paper are shrouded in clouds of connotations, misuse, and varying meanings, defining the terminology used throughout this paper is vital. Even the more rudimentary terms like dog necessitate a discussion of meaning; in this discussion the boundaries of that term shift in unexpected ways. In the exploration of the multi-dimensional relationship between humans, their technologies, and their dogs, culture is the common denominator: the glass through which we are able to understand how these entities are reacting and interacting with each other. For the purposes of this paper culture shall refer to a shared set of practices, norms, values and symbols. Because the scope of this research pertains primarily to Western cultures, and specifically to the current and past cultural climates of the United States, when the term appears without clarification it is in reference to that culture in particular.

Wikipedia, the quickest and one of the most comprehensive digital references of our time, handily defines technology as "a broad concept that deals with human as well as other animal species' usage and knowledge of tools and crafts, and how it affects a species' ability to control and adapt to its environment. Technology...can refer to material objects of use to humanity, such as machines, hardware or utensils, but can also encompass broader themes, including systems, methods of organization, and techniques." This definition allows for a multispecies dialogue that opens the door to a

2

great range of possibilities, for it does not restrict the roles of human, dog, or machine in terms of creator, tool, or commodity. It opens the door to a new way of thinking about our systems and techniques, and how our creation of and implementation of these systems and techniques profoundly affect the nonhuman entities with which (or whom) we share our lives. In terms of this paper technology refers to anything (or anyone) engineered or manipulated by humans to better serve them, in terms of functionality and/or emotional fulfillment.

For the purposes of simplicity and specificity this paper focuses primarily on handheld mobile devices in its discussion of the intimacy of the human/machine relationship in modern America, although other types of technologies enter the picture from time to time. Handheld mobile devices are an umbrella under which a collection of technologies reside: everything from the obvious cell phones to the less obvious iPads, laptops, and game controllers. However, most mentions of handheld devices refer to mobile phones, the apparatuses that stay nearer to us than anything (or anyone) else.

Man's best friends—or second best where the cell phone comes in first—have undergone a dramatic evolutionary change since they first maneuvered their way into the lives of early humans some fourteen thousand years ago. Biotechnologies continue to thrust the species-level changes onward, if not upward. At the most basic level dog refers to the *Canis lupus familiaris*, and for the purposes of this paper, unless otherwise specified, the term refers to animals not directly genetically altered by humans. While

3

centuries of manipulation have given humans the power to dramatically influence doggy DNA, this influence is present in the manipulation of copulation (as opposed to the technologically advanced direct manipulation on a cellular level). Where we see direct genetic manipulation is in cloning and the relatively new genetic alterations by private companies with the intent of creating more marketable products such as hypoallergenic dogs. That humans route and reroute the course of canine evolution is one of the fundamental pillars of the human/canine story.

While no one history has ever been definitely proven, most experts agree that the relationship between humans and dog bloomed out of a parasitic relationship that evolutionarily benefitted both species. In *The Truth About Dogs*, Stephen Budiansky constructs a possible scenario of the earliest human/canine relationships:

> For some time, a few biologists have suggested that perhaps the domestication of the dog was preceded by a much longer period of loose association, in which some wolf populations became "preadapted" to human society. Scavenging campsites, following human hunters (or perhaps vice versa: human scavengers following wolf hunters), perhaps even occasionally sneaking in to share the warmth of the fire, those wolf subpopulations that were less fearful and more subservient in their approach toward man would have gained an edge in the Darwinian struggle for survival. (Budiansky 2000, 20)

Fossils of humans and canines have been found together that date to almost half a million years ago, suggesting that at the very least both species inhabited the same geographic areas at the same time (Katz 2003, 24) Eventually canids graduated from their status as co-hunters and sharing basic territory with humans, to living with humans and engaging him emotionally, a relationship that has been documented as far back as 12,000 years ago when a puppy was buried inside a coffin with a human, the human's

arm positioned around the puppy. Other tales of the dog/human relationship date back to ancient Chinese, Greek and Egyptian societies. The Han Chinese emperor, Ling, was said to keep dogs as senior officials in his royal court; aristocratic Athenians reportedly paid twenty times more for high value dogs than they did for human slaves; Mary, Queen of Scots kept a pack of little dogs who wore velvet suits. (Schaffer 2009, 9)

The long history of canine domestication begs some puzzling questions from the Darwinian point of view. It is easy to see how dogs benefit from this scenario: humans provide them food, water, shelter and affection. The more elusive question is what exactly do we get from this one-sided scenario? Budiansky notes the apparent inequity of this scenario: "Dogs belong to that elite group of con artists at the very pinnacle of their profession, the ones who pick our pockets clean and leave us smiling about it. Dogs take from the rich, they take from the poor, and they keep it all." (Budiansky 2000, 1)

A long list of human health benefits has been attributed to living with dogs, and we are social beings who benefit a great deal from social bonds. These are the reasons most often cited in possible explanations for what humans have to gain from dog ownership. In *The New Work of Dogs*, Jon Katz quotes a sociologist who echoes this evolutionary explanation for how and why the dog/human relationship has flourished: "Dog-keeping is genuinely adaptive in the evolutionary sense of the word, since it contributes to the individual health and survival by ameliorating the stresses and strains of everyday life. These benefits far outweigh the costs of caring for the animal." (Katz

2003, 24) To look only at the evolutionary benefits—valuable though they may be—is only to look at a fraction of the whole story. Humans are intellectually complicated social beings with a long history of social drama, a drama that has tended to involve dogs from time to time.

In the last several hundred years, animal keeping, both as an occupation and a habit, has bridged the economical divide. On one hand, people kept animals as participants in their livelihood. In this scenario dogs usually served as tools, designed to herd, patrol and protect (dogs as a kind of technology). On the other hand, aristocratic society kept frivolous animals as a staple of their status. Their dogs lived absurdly luxurious lives, for what else could better broadcast one's status than keeping a silly animal and maintaining for it a standard of life far and away better than that of most ordinary people? In the lat 19th century, Thorsten Veblen wrote that elite pets were "living emblems of conspicuous consumption." (Schaffer 2009, 10)

The progression of dog keeping since Veblen's days has been a rollercoaster of culturally accepted standards and norms. In his book *One Nation Under Dog*, Michael Schaffer articulates the relationship between pet keeping and each era's ideas about kindness, domesticity, and comfort: "The lapdog in the millionaire's mansion became the golden retriever in the suburban backyard." (Schaffer 2009, 11) As wealth increased, both vertically and horizontally, dog ownership also increased.

Dog keeping used to involve the antiquated architectural archetype: the dog house. In the early 20th century, dog ownership existed primarily in more rural areas.

6

When city dwellers owned dogs it was because they were well-to-do. (One could make the case today that most city folk who keep dogs are still well above the poverty line). Then in the 1950s and 60s things started to change as people moved away from cities and into the suburbs. The nuclear family consisted of two opposite-sex parents, two kids, and a dog, and they were all supposed to live in a clapboard house with the quintessential picket fence. Meanwhile, a good economy was pumping out new technology that did more and more of the house work and the yard work, leaving ordinary people with an unprecedented amount of free time. Around the same time divorce became more socially acceptable, and its numbers began to rise steeply. Writers like Richard Yates (author of *Revolutionary Road* and *Young Hearts Crying*) began documenting the fractured sense of isolation many people were deeply feeling.

Where were dogs in all of this? They were quietly making the transition from pets to family members, from doghouse to dog bed to human bed. Although by the mid-twentieth century dogs were becoming a part of the nuclear family, pet ownership in the 1950s and 60s meant something very different than it does today. Even the ways in which people acquired dogs fifty years ago is radically different from the way they acquire them now. Once upon a time people would pick up a dog from a friend's litter or a newspaper advertisement; only the very wealthy bought pricey purebreds. Now the way you acquire your dog is a politically-charged decision. Buying a dog from a newspaper ad usually means you are supporting a puppy mill; choosing to buy a purebred dog, even if it comes from a breeder who complies with ethical guidelines set

forth by a governing body, is considered a less socially responsible decision than choosing a rescue. Dog rescue has become an incredibly large movement, one that John Homans (in his *New Yorker* article, *The Rise of Dog Identity Politics*) likens to the civil-rights struggles in the 60s, a "final frontier for the universalist ideals." Homans expounds on the sometimes complicated practice of dog rescue:

> Animal rescue is ...one of the opportunities of ordinary Americans for real heroism—and more and more, they've taken it. The dog's innocence amplifies empathy, because there's no ethical static, no human otherness to contend with. It's less complicated to love a pet than a person. The risk and conflict and cloak-and-dagger swagger that some of these missions entail can give lives a life-in-the-wartime meaning they otherwise wouldn't have. There's selflessness here, but just as in wartime, there's also addiction." (Homans 2010)

In fact, dog rescue has become so popular that blue states (especially on the East coast) import rescue dogs from red states, or other countries such as Puerto Rico, where lower levels of education and more poverty result in higher numbers of homeless dogs. The desire for heroism makes people prone to believe that whatever dog they pick up at the Humane Society has been rescued, even though dog trainers universally agree that even normal, relatively well-adjusted dogs display many of the same symptoms as abused dogs when put into stressful situations or new situations.

However people are acquiring their dogs, one thing is for sure: they are acquiring them at an unprecedented rate. An article from the *Washington Post* in the 1950s estimates the total number of dogs in America at the time to be between 12 and 15 million. By 1991 the American Veterinary Association released a report estimating the new total number of dogs to be about 51 million, a number that rose to 68 million

by 2002, according the Humane Society. (Katz 2003, 10) At the same time dogs were working their way into the homes of millions of Americans, technology was becoming more and more intimate, too. In *Bowling Alone*, Robert Putnam explains that the advent and proliferation of television in America has caused our communities to become wider and shallower. The "technology of leisure" as Putnam calls it, was made possible by a growing and profitable economy, another factor that directly contributed to the outward suburban sprawl, which, as we have seen, is all directly connected to the rise in dog ownership across America.

In his book, *The Technological Society*, philosopher Jacques Ellul claims that the increased technological presence in people's lives is attributable to five main factors: 1) a very long technical maturation or incubation without decisive checks before the final flowering; 2) population growth; 3) a suitable economic milieu; 4) the almost complete plasticity of social malleable and open to the propagation of technique; 5) a clear technical intention, which combines the other factors and directs them toward the pursuit of the technical objective. (Ellul 1954, 60)

Some of these factors have certainly contributed to the increased canine presence in people's lives as well. Undoubtedly the population growth has had some effect both on dog ownership directly (the more people there are, the more people there are who own dogs), but the population growth has also contributed to more general changes in lifestyle. The outward spread of housing structures and a financially secure environment have both affected dog ownership in obvious ways.

Increased cell phone subscriptions over the last fifteen years are like a condensed version of the growth of television ownership over the latter part of the 20th century. According to statistics released by CTIA Wireless Association in December 2009, more than 285 million Americans subscribed to a cell phone plan. That number was as low as one million in 1987 and 55 million in 1997. The release of the iPhone in 2007 and subsequent touch-screen iterations such as the HTC's Droid are only increasing cell phone use. These new technologies are the embodiment of countless other machines in a singular device, and as such are quickly replacing outdated technologies such as fax machines and landlines. The cell phone industry is a major financial player; CTIA estimates total revenue for the wireless industry to be more than $152 billion in 2009.

Indubitably, the last fifty years have marked steep increases in technological and canine presences in the many American lives. In many ways they are wholly disparate enterprises, yes, but to deny them any similarity would be a vast misconception. Those places of intersection are sometimes obvious and sometimes obscure, but inevitably both serve as cultural representations of who we were and who we are. Where to start? Perhaps with history, for the techno/canine histories tell a story of connection.

The Wikipedia entry on the history of technology actually states domestication of animals as a key element. This particular historical review of technology separates human technological history into categories based on specific milestones such as fire, domestication of animals, and tool-making. The latter has been a popular standard for

what sets humans apart from animals, or it was until Jane Goodall observed chimpanzees making and implementing tools during her research in the 1960s. Biologists have since recorded a myriad of other animal species creating and implementing tools. While tool-making is not human-specific, it is a fundamental root of the human inclination to build or mold contraptions that ultimately make their lives easier or more entertaining.

According to Alan Kay and Adele Goldberg in their essay, *Personal Dynamic Media*, people have been using devices for thousands of years to store, retrieve and/or manipulate data. These technological tools have also served to materialize thoughts, facilitate communication, and eventually to "augment the actual paths the thinking follows." (Kay and Goldberg 1977, 393) In 1977, when Kay and Goldberg wrote about their vision for what personal dynamic media could entail they envisioned a change in the unidirectional way most technology functioned, and imagined instead a device that would open the door to two-way interaction.

In the 1960 essay *Man-Computer Symbiosis*, J. Licklider maintains that one of the aims of the man-computer partnership is "to enable men and computers to cooperate in making decisions and controlling complex situations without inflexible dependence on predetermined programs." It is interesting that he refers to the human/machine relationship as a partnership, a term that seems more appropriate for human/human or even human/dog relationships. Licklider describes symbiosis by explaining the fig tree-insect relationship (an unrelated but useful metaphor):

The fig tree is pollinated only by the insect *Blastophaga grossorun.* The larva of the insect lives in the ovary of the fig tree, and there it gets its food. The tree and the insect are thus heavily interdependent: the tree cannot reproduce without the insect; the insect cannot eat without the tree; together, they constitute not only a viable but productive and thriving partnership. (Licklider, 1960, 75)

Licklider's metaphor bridges the technology/nature divide, and also brings together some interesting contradictions: production versus reproduction; nourishment versus maintenance; dependency versus interdependency. Humans are the creators of the computer; nature is the creator of the dog—and yet, humans are in control of the production/reproduction of both. The device and the dog both rely on humans for nourishment and maintenance; and humans, in turn, sometimes rely on either or both for his sustenance. Now relegated mostly to rural areas, farmers around the world still rely on dogs to herd and protect livestock (their livelihood). In mostly urban areas, huge percentages of the population now rely partially or entirely on a symbiotic relationship with computers to fulfill their workplace duties. In short, Licklider's fig tree-insect metaphor echoes many of the recurring ideas about the ways in which dogs and technology compete for and fulfill similar roles in human lives.

The language Licklider uses to describe the human-computer relationship is not entirely objective, nor is it devoid of emotional connotations. He finds fault with J. D. North's view of computer systems as mechanical extensions of the human because it is a framework that does not consider symbiosis. Licklider writes that North's mechanical parts are "extensions, first of the human arm, then of the human eye. These systems certainly did not consist of 'dissimilar organisms living together...' There was only one

12

kind of organism—the human—and the rest was there only to help him." (Licklider 1960, 75) That Licklider is not satisfied with North's view of machines as purely subservient to humans seems to indicate an anthropomorphic element of his disapproval.

Discussions of working dogs' roles in modern society are similar in many ways to Licklider's metaphorical view of the human/computer symbiosis. Working dogs are neither pets nor family members per se, but are complicatedly woven into the lives of those they work with and for. Haraway describes them as "laborers who produce surplus value by giving more than they get in a market-driven economic system." (Haraway 2008, 55) They are not self-directed, nor are they extensions of a person. They retain the autonomy to make their own decisions in many cases, and indeed good working dogs excel at decision-making and are encouraged to do so. They rely on people for their keep; in turn, people rely on them to keep his livestock (livelihood) alive and well. People may not have been responsible for their initial creation, but he has certainly been responsible for manipulating these working dog's genetics for thousands of years. Edmund Russell's book, *Industrializing Organisms*, addresses the convergence of technology and biology by defining organisms shaped for functional performance in human worlds as biotechnologies—"biological artifacts shaped by humans to serve human ends." (Russell 2004, 16) Whether you regard mobile devices as extensions of the human or working dogs as biotechnologies, the human pattern of creating, implementing and revising tools is a central thread of the human story.

Humans created one and manipulated both, and it is because of humans that there is a direct connection between the two. To what extent is the huamn relationship with each also a matter of control? Handheld mobile devices are laboriously designed by people to respond to people, a system that is obviously designed to make human lives easier, more mobile, more functional, and more entertaining. The development and success of this industry is in many ways a byproduct of the same impulses that first ignited in people the desire to engage in tool-making. Viewed in that light, the $152 billion cell phone industry has its roots in the era of the caveman. Early humans had a penetrating need for social connection, so in that way too mobile phone use today is a reflection of deep human desires and needs.

The cell phone technology in the last decade has managed to embody some of the most important parts of our culture. As Henry Jenkins says, culture drives technology, not the other way around, and nowhere is this more obvious than with cell phone technology. (Jenkins 2006) The first cell phones connected people by voice. They were cumbersome, difficult to use and had poor service. Today cell phones serve as regular phones, fax machines, email centers, internet browsers, social media connectors, cameras, alarm clocks, calculators, weather forecasters, radio receivers, music players, calendars.... The list is almost endless and ever-growing. The cell phone as a singular object embodies American culture comprehensively in a way no other device can. It reflects our need for entertainment and connections to other people,

14

some of them familiar, some of them not. It is the plow horse of America's corporate and social toolkits.

What began as a useful piece of technology for upper and middle class sectors of American culture in the 1990s has now pervaded every financial, age and cultural demographic. The only large scale exception is that of the elderly, people who grew up without a technological device bolstered to their belt. You would be hard pressed though to find even one twenty-something in America who did not own a mobile phone. According the U.S. Census, the number of cell phone subscribers in the U.S. alone rose from 34 million in 1995 to 159 million in 2003, more than 300 percent rise in less than ten years.

As of 2009 over 60 percent (or 68.5 million) American households owned pets, a 12 percent rise in just six years, an increase that is over twice the rate of human population growth in this country. (Schaffer 2009, 14) According to numbers released by the American Pet Products Manufacturers Association (APPMA), Americans spent $41 billion on their pets in 2007—up from $17 billion in 1994. This number includes all expenses: food, toys and medical care. Even with the hurting economy, most studies are recording and predicting continued growth in the industry. Packaged Facts, a market-research firm, has predicted a steady 7 percent growth increase in the pet industry until 2011. APPMA president, Bob Vetere says the pet industry is "bigger than toys, bigger than candy, bigger than hardware, bigger than jewelry. If it were treated like a single retail segment …it would be the eighth-biggest retail segment in the United

States." Vetere's projection for the industry for 2010 is in line with his overall optimism about the industry as a whole: $43.4 billion, an additional 6 percent rise. (Schaffer 2009, 16)

Those annual industry figures might make sense when you look at the direction the industry has gone over the last ten years. What once would have been considered outrageously luxurious has become commonplace among many American pet owners. For instance, the pet food industry has followed in the steps of the mainstream human food industry in its quest for 'natural' and organics, even if only primarily as a marketing scheme. The market has been saturated with pet food and treat companies claiming to sell the most natural, wholesome products.

Not only is the dog population exploding, so are canine inheritances. In 2007 New York billionaire Leona Helmsley's will left $12 million to her Maltese, Trouble. In his book *One Nation Under Dog*, Michael Schaffer addresses the changes in this country succinctly: "In a relatively short period of time, the United States has become a land of doggie yoga (sic) and frequent-flier miles for traveling pets, a society where your inability to find a pet sitter has become an acceptable excuse to beg off a dinner invitation, a country where political candidates pander to pet owners and dog show champions are feted like Oscar winners." (Schaffer 2009, 8)

Interestingly, the change Schaffer describes is evident in American advertising over the last fifty years. Dog imagery in print and early television ads used to depict a dog in the background in the doghouse, or at the very least, outside. Over the last five

decades the dog has moved closer and closer inside so that now dogs in advertising, like real life, have made the leap from the dog house to the owner's bed.

The image on the left hand side is a 1959 advertisement for windows, featuring a little girl happily playing inside and a St. Bernard frolicking outside—in the snow, no less. The image on the right is a 2008 ad for Pedigree treats featuring an English bulldog sitting in a chair, like a king, with a human hand in the lower right hand corner offering a treat. Not only has the dog moved indoors, out of the snow, but has assumed a throne. The human in this scenario is actually beneath the dog, not only physically lower than him, but also humbly offering treats. From the color tones to the imagery, the contrast here is stark, and a clear indicator of the immense changes in dog ownership over the last fifty years.

It is important to note also the profound effect dogs have on the first-world economy. Haraway aptly refers to dogs as "agents of technoscientific knowledge production in the regime of lively capital." (Haraway 2008, 56) The viral popularity of dog training shows like National Geographic's *Dog Whisperer* and Animal Planet's *It's*

Me or the Dog is just one indicator of how huge the canine industry has become. Dogs in America have not only earned the right to healthcare, shelter and food, but have joined the ranks as coconsumers in American capitalism, a status that is epitomized in the apparent marketability of the SNIF tag.

This handy (and stylish) little piece of technology gathers information about what your dog is doing while the owner is away from the home and works as a social networking device. It senses when other SNIF-wearing dogs nearby, records their information and uploads it to a Facebook-like interface. The SNIF website proudly lists the tag's ability to make you more friends; by connecting wirelessly, your dog's SNIF tag gathers information from another dog's tag, allowing you to log in later and see who your dog met. Then you can decide whether you want to "SNIF" them out a little more. The SNIF tag does far more for dog-obsessed owners (and dog-owner-obsessed dog owners) than it does for the dogs themselves.

The evolution and progression of dogs and technology have not only coincided with landmark changes in American society, but have followed parallel tracks. Both dogs and handheld devices are the result of a most basic human instinct: the instinct to adapt one's surroundings to better suit oneself. It is important to note that these adaptations are not always geared towards improving functionality. The point at which dogs transitioned from co hunter to co habitant marks a point where dogs become something more than just a useful way to procure food. And again: the point at which dogs transition from the American dog house to the American bed is an even greater

18

stretch of human/dog boundaries. It is this most recent transition that indicates a new reason for people to have dogs, and thus a new impetus for breeding and, in some cases, creating them.

At first, humans denied dogs the right to reproduce. We took it upon ourselves to decide which dogs were fit, and in what circumstances. Of course dogs occasionally bypassed this human element in their reproduction, but certainly not with our approval. The human dominion over canine reproduction was the first manner in which we altered their species, thereby creating a diversity of dog breeds lacking diversity in their gene pools. We created working dogs: specialized creatures engineered to complete very specific tasks, and we created companions: ill-designed creatures engineered to elicit affection, borne of something resembling sympathy. (For example: the "he's so ugly he's cute" explanation people so often use in reference to those breeds with dysfunctional noses and faces, including Pugs and English Bulldogs). The issue of dog breeding is explored in depth later, but is preceded by a look at other ways dogs figuratively and literally embody technology.

The American dog today lives a life intertwined with technology from the moment of their birth (even—or especially—mutts are a result of this breed-specific system) until the moment of their death. The Humane Society of the United States actively promotes microchipping, and it is common practice today for dog owners who have bought their puppies to have them microchipped when they are spayed or neutered if the breeder has not already done so. Not to be confused with GPS

(although several companies are just recently beginning to offer **GPS** devices designed

for dogs), microchips are **RFIDs** (Radio Frequency Identification) the size of a grain of

rice that is implanted under the dog's skin, usually between the shoulder blades. The

chip contains pertinent information about the dog including name, age and, most

importantly, its owner's contact information. When a dog is found veterinary clinics

and animal shelters routinely scan for a microchip; if there is one present the dog is

usually returned to its owner without further incident. Until technology advances to the

point where **GPS** capabilities can be imbedded in the microchip without compromising

its size, the chip will remain unable to actually locate the dog. **RFID** technology is a

popular concept among manufacturers and marketers for the possibilities of what it can

do to aid consumerism.

The extreme bioethical controversy surrounding cloning makes it a difficult

subject to approach, but it would be amiss to discuss dogs as technology with no

mention of cloning. Where cloning dogs pertains to this discussion is in its outcome: a

hybrid kind of dog that is both nature-made and human-made at the same time; a dog

that is infinitely repeatable. Wolfe acknowledges the Frankenstenian nature of cloning

and genetic manipulation, acknowledging the intensely difficult task of regulating the

practices, legally, economically, or politically. (Wolfe 2003, 25)

For Haraway the topic of cloning is interesting as it pertains to the companion

species manifesto. "I want to know how the emergence of an ethics of cross-species

flourishing, compassion, and responsible action is at stake in technosavvy dog cultures

engaged with genetic diversity, on the one hand, and cloning on the other." (Haraway 2008, 133) To support ethical breeding practices (admittedly a debatable standard) seems to deny cloning. Several companies have offered and continue to offer pet dog cloning services.

Advertisements for Animal Cloning Sciences, Inc. (ANCL) showed an elderly woman holding a terrier with the words, "You no longer have to look forward to heart-rending grief at the death of your pet. If you preserve your pet's DNA now, you will have the option to clone your pet and continue your pet's life in a new body." (Haraway 2008, 151) An August 2008 article in *Wired Magazine* insists Bernann McKinney was wrong to clone her Pit Bull Terrier, Booger. The South Korean company RNL Bio reportedly discounted their $150,000 fee in anticipation of the press coverage, but McKinney still sold her house to afford the five Booger clones. Are the Booger clones as natural as Booger himself? Does the ability to replicate genes give us the ability to replicate a dog? These are technocultural and bioethical questions that are important to ask.

In many ways cloning bridges the technological/biological divide by allowing the perfect replication of biological materials. Is a cloned dog a product of nature or of people? Regardless of what your bioethical stance may be, that is a difficult question to answer. Lifestyle Pets' genetically engineered hypoallergenic dogs and cats are a touch more natural, maybe, but in many ways embody the bio-techno animal as it exists today.

As human ability to manipulate biological matter increases, so too does the extent of our interference with natural selection.

If we understand the prehistoric roots of the human need for connection and the desire to engage in tool-making it becomes easier to see the dog as an extension of this: one of humankind's most intimate tools and sources of emotional fulfillment. Among the most central human emotional needs are the need for physical affection, the need to be needed, and the need to feel loved. The co evolution of humans and dogs, and subsequently of humans, dogs, and technology has resulted in a dichotomy wherein both dogs and technology vie to fulfill the human emotional psyche. (As we will see, both vie to fulfill the more practical aspects of human life, too). While many technologies placate these needs, those that are designed directly in response to one or all of these needs are digital and robotic pets. This genre is worth mentioning as it pertains to the idea of the perfect digital/dog combination because oftentimes digital and robotic pets are designed to replace live dogs, and are thus created in response to human emotional needs.

Most digital and robotic pets popular in the marketplace today have a great propensity for appearing to enjoy affection and the simultaneous need for attention. Tamagotchi™ was one of the first digital pets widely sold around the world. Created in

Japan, over seventy million Tamagotchis™ have been sold worldwide since they first hit the market in 1996. It is a screen-based system that requires the user to feed, clean, and interact with it on a regular basis or it will die.

Tamagotchi™

Ironic though it may be, clearly millions of people choose to engage in "work" as a part of play. Apparently, these egg-shaped computers fulfill some basic human inclinations. Facebook offers "live" fish tanks and farms, complete with a store where you purchase your fish or farm animals, all of which cost real money. Like the Tamagotchi™, ignoring your fish tank or farm can result in a swift decline in the health or "death" of your virtual animals. (Although whether it is possible for a digital creature to "die" is highly debatable).

Like screen-based digital pets, synthetic pets existing in real space fulfill some of these basic human needs, but unlike their screen-based counterparts they can serve people in a tactile capacity. Their intense popularity suggests they are fulfilling some

very real human desires. A search on Amazon (accessed November 2009) for the most popular holiday toys revealed that seven of the top twenty five toys are Zhu Zhu Hamsters™ and their accessories. Zhu Zhu Hamsters™ are robotic, furry creatures imparted with a basic level of artificial intelligence that allows them to know some basic commands as well as move around and make sounds. The manufacturer, Cepia, LLC, refers to them as "smart pets" and their website explains that they are the best alternative to a real pet because they "don't poop, die or stink." There are several models; each one comes complete with one of four personality types available. Zhu Zhu Hamsters™ can be set in one of two modes: explore mode or loving mode (which seems to imply that "exploring" is the antithesis of "loving").

There is a lot of diversity under the canopy category of robotic dogs. Some are developed with simple functionality and marketed primarily to children. According to the WowWee Group's website, WowWee Wrex the Dawg™ is "a mischievous robotic pal and a real junkyard dog!" While Wrex™ actually looks like he's made out of industrial junk, the WowWee Group also makes the WowWee Alive™ series, comprised of baby wild animals (lions, jaguars, and seals). The Alive™ cubs are adorably fluffy (unlike Wrex™) and perform basic functions: they are responsive to affection, sleep when left alone (before powering down) and emit "realistic baby sounds."

WowWee Rex™

Sony's now discontinued AIBO might qualify for the same robotic dog classification as WowWee Wrex™, but that that is where the similarities end. While some of its fan base is interested in developing an emotional bond with their AIBO, many of them are fascinated by the technology behind it. The AIBO demographic is older, more attuned to modern technology and willing shell out $2,000 to $3,000 to purchase one. Batya Friedman, Peter H. Kahn, Jr., and Jennifer Hagman at the University of Washington analyzed discourse in AIBO forums to better understand people's relationships with these mechanized dogs. The goals of the study were to a) challenge traditional boundaries, b) extend conceptions of self, family and/or community, and c) explore whether robotic dogs can or will replace interactions with real pets. (Friedman et al. 2003)

AIBO, ©Sony

Over the span of the study Friedman, Kahn and Hagman gathered a total of nearly 6,500 postings, 3,119 of which were AIBO-centric. They then analyzed the discourse with the following criteria: conceptualizations of technological essences, life-like essences, mental states and social rapport. Discourse in each of these areas allowed researchers to better understand how people really felt about their AIBOs. Many forum participants developed strong emotional attachments. One member wrote:

> "Oh yeah I love Spaz [the name for this member's AIBO], I tell him that all the time... When I first bought him I was fascinated by the technology. Since then I feel I care about him as a pal, not as a cool piece of technology. I do view him as a companion; among other things he always makes me feel better when things aren't so great. I dunno about how strong my emotional attachment to him is...I find it's strong enough that I consider him to be part of my family, that he's not just a 'toy', he's more of a person to me."

This member acknowledges both the technological appeal and the emotional bond he or she feels towards Spaz. Other members echo similar sentiments, explaining

that they consider AIBO to be a friend and confidant. This sentimentality is particularly evident in several members' online response after an AIBO was thrown in the garbage on a live TV show: "I can't believe they'd do something like that?! That's so awful and mean, that poor puppy..." And another member wrote, "WHAT!? They actually THREW AWAY AIBO as in the GARBAGE?!! That is outragious! That is so sick to me! Goes right up there with putting puppies in a bag and than burying them! OHH I feel sick..." This particular example takes the AIBO-as-a-real-dog perception to the ultimate level, a level in which AIBO has been endowed with morality. These responses indicate the notion that AIBO has a right to a certain level of respect, that it is capable of suffering.

Friedman, Kahn and Hagman are interested in exploring the human-robot relationship in the realm of animal-like companion robots. They predict a future in which robotic pets become more and more animal-like, thus requiring continued research as to the human psyche's response to technologically advanced animal-like robots. Friedman, Kahn and Hagman are of the opinion that in some cases humans would benefit greatly from interacting with robotic animals instead of real ones, such as in nursing homes where the positive effects of dog cohabitation are at odds with the practicality of keeping dogs in such an environment. On other hand, Friedman, Kahn and Hagman point out that in the case of children the proliferation of robotic dogs could be quite harmful. Research indicates that interaction with a dog can help a child develop notions of fair exchange, reciprocal care and justice. (Friedman et al 2003)

That valuable social learning might well be jeopardized by a machine with no moral code. Haraway would likely agree that children interacting with robotic dogs might be a significantly less valuable experience than interacting with real dogs. She believes that touch is invaluable because it ramifies accountability. (Haraway 2008, 36)

A recent study out of the Griffith University in Brisbane, Australia specifically explores how children view robotic dogs as dogs rather than machines. Researchers B. Bartlett, V. Estivill-Castro, and S. Seymon suggest that children today do not suffer from confusion between reality and fantasy. To a child, AIBO is not a fantasy, but a reality. (Bartlett et al.) It became clear, especially among the youngest groups of children just how committed they were to the idea that AIBO was a dog, not a robot. Even after repeated demonstrations and explanations illustrating that AIBO was a robot, not a dog, younger groups of children continued to see it as a dog instead of a robot. Bartlett and his research team conclude that while today's generation of children have not necessarily acquired a new definition of 'living,' they do see robotic dogs more as robotic pets than canine machines, and that this view will play a part in the continued manufacturing, selling and interactions of people with robotic dogs.

Regardless of discordant stances on whether or not robotic animals would improve or weaken human moral code, it is clear that humans are seeking to create digitized pets that most closely resemble real ones. In the case of Zhu Zhu Hamsters™, technological progress allows for a relatively basic design that fills some human needs in a rudimentary way. Zhu Zhu Hamsters™ provide physical affection,

and responses that indicate pleasure or displeasure, a combination that is supposed to elicit an emotional response from its human user. Sony's AIBO, on the other hand, is not tactile in the same way (ie not soft and fuzzy), but is much more sophisticated in its ability to communicate with its human user. Tamagotchis™ provide even less tactile feedback than AIBO, and are much less technologically sophisticated, but require input from their user to "survive."

While some researchers devote time and resources to the development of robotic and digital pets intended—at least in some cases—to replace real ones, others concentrate efforts on creating technology-mediated interactions with live pets. In some ways these technologies seek to bridge the same gaps as the robotic pets; they are an answer to a desire for non-human connectedness in a fast-paced and fragmented society. Many of the studies focus on remote interspecies communication as an answer to the long time spans many people are away from their pets on a daily basis.

One such study out of the National University of Singapore seeks to promote a new type of media interaction by allowing human users to play with their small pets (hamsters specifically) remotely using a mixed reality-based game system. This particular game, "Metazoa Ludens," works by allowing the human player to remotely control an attractor that the hamster then chases. The hamster's movements are translated into the online game through the use of multiple sensors, and the game is represented online by avatars. It is a predatory game where the avatars reverse normal roles; the hamster chases the human avatar.
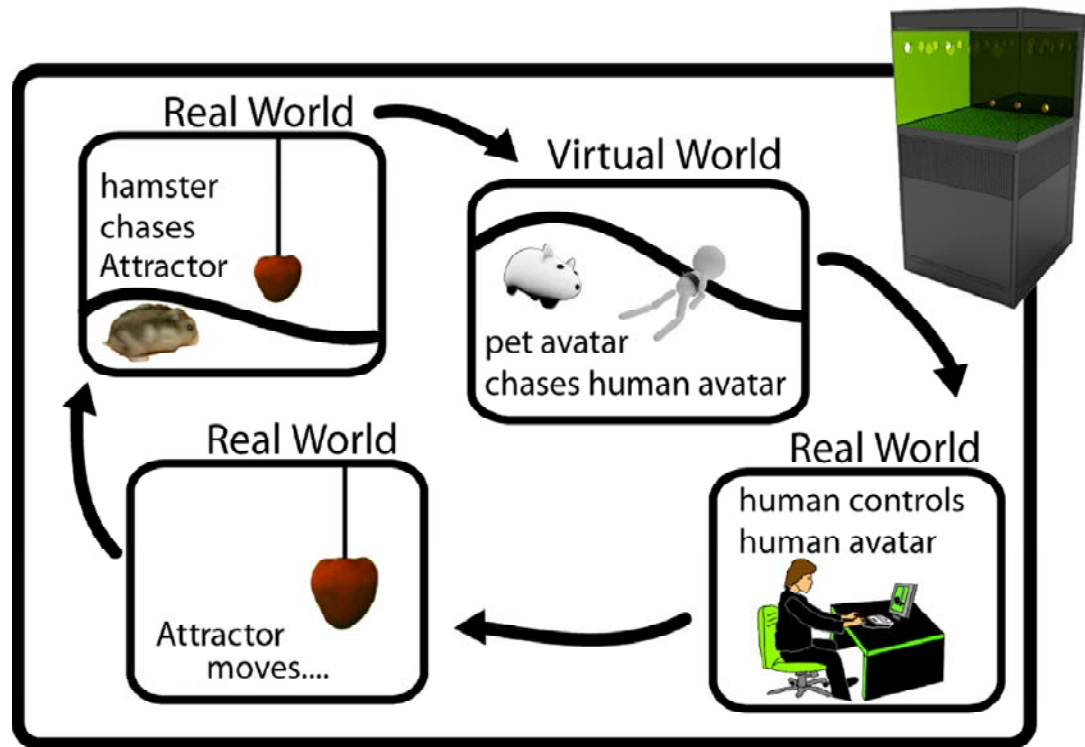
Using established wellness measures for both humans and hamsters, researchers determined that both players benefited. The added benefit of physical exercise for hamsters should not be underplayed since a lack of exercise among pets is one of the most problematic consequences of domestication. All in all, "Metazoa Ludens" provides a digital element to the human-animal interaction that offers the possibility (and in this case actuality) for enhanced and enriched interaction.

A similar study sought to create a remotely controlled system that allowed humans to play with their dogs virtually while away from the home. Research director, Ken Mankhoff, cites a similar need to create an interface that allows for remote interaction as a result of a society that requires the human member to be away from the

home for extended periods of time, a lifestyle that can be especially destructive to dogs, the social pack-oriented creatures that they are. Ken Mankhoff, et. al. developed (and continue to develop) a Pack Activity Watch System: Allowing Broad Interspecies Love In Telecommunication with Internet-Enabled Sociability (PAWSABILITIES). (Mankoff et al. 2005)

The synergistic relationship between humans and canines has been long-studied for its benefits, and yet the daily extended absence of one member puts strain on that relationship. This strain often results in destructive canine behavior; separation anxiety is one of the most common reasons listed for people who surrender their dogs to animal shelters. The PAWSIBILITIES system focuses on allowing dogs to interact remotely with their pack members. The system is comprised of two major elements: 1) a camera and audio system that sense movement and interaction in the human workplace, outputting them via projection and speakers to the dog's environment, and 2) a remotely controlled tennis ball release system that allows the human participant to play with the dog from any location. The system is only roughly developed, but the ideas behind it are useful in the exploration of interspecies remote awareness.

In many ways, technologically-mediated animal/human relationships are in their infancy. The advent of the SNIF Tag, Dogbook (Facebook for dogs), and systems such as Metazoa Ludens and PAWSIBILITIES are just beginning to experiment with ways in which people can communicate with their animals in a non-physical realm. Digitizing animal/human communication is problematical in terms of dogs' role in

replacing human-human physical relationships post mid-century fragmentation. It may seem like a natural progression as every facet of daily life in the United States is in some way technologically mediated, and yet many of the benefits humans glean from relationships with their dogs would be negated with increased digitalized encroachment.

Clearly dogs and technology compete to serve human emotional needs, but both also compete in a diverse array of other arenas, including scent detection, security, service to the disabled, and entertainment. In each of these fields effectiveness varies, but microcosms of this competition yield insight into technology/dog dichotomy.

Michael McCulloch and his team of researchers conducted a study that tested the feasibility of training ordinary household dogs to accurately identify the presence of lung and breast cancer in breath samples from patients and control groups. Researchers used food-based reward methods to train five ordinary household dogs to detect the slight biochemical changes known to occur in breath when particular types of cancer are present. Canine scent detection as compared to biopsy-confirmed conventional diagnosis was 99 percent accurate among lung cancer controls and 88 percent accurate among breast cancer controls, across all four defined stages of cancer. Training the household dogs lasted only three weeks to accomplish this level of scent detection. The canine nose has detection thresholds as low as parts per trillion; it is a smelling machine that people have been utterly incapable of recreating. The gas chromatography/mass spectroscopy (GCMS) was designed to accomplish the same

level of cancer identification as the canine nose, but to date GCMS is unable to detect anywhere near all of the chemicals present.

Canine scent detection is also effective in locating the presence of explosives and narcotics and therefore is used in a variety of fields including landmine detection and airport security, just to name a few. The use of large dogs in airports is also a method of intimidation—not unlike the technologically enabled security screening process. In his essay *Police Dogs in the Use-of-Force Continuum*, Jonathan K. Dorriety considers the role of the police dog. The use-of-force continuum refers to the minimum amount of force needed in any particular police situation to establish control of a resistant subject. Because police dogs have seriously or lethally injured subjects in the past, whether they should be considered weapons or tools is a widely debated issue. Useful though they may be, Dorriety concludes that it is ultimately unrealistic to consider police dogs to be tools because they inherently have some decision-making abilities (which, ironically, is also why they are useful). Dorriety explains that ideally police dogs should never make their own decisions, but instead always defer to and obey their handler.

In the quest to find the ultimate mode of protection, some families are now turning to Lifestyle Pets, a company with a complete line of genetically altered hypoallergenic cats and dogs. Lifestyle Pets has recently released a new line of German shepherd guard dogs, called the Titan and the Titan Ultra. Descendants of German shepherd champions, these dogs undergo two years of intensive training before they are

sold to the (elite) public. The standard Titan costs $70,000, while the Ultra is an incredible $100,000. That most people are aware of the STRANGENESS of purchasing a dog with a specific brand and model name might seem strange in light of the long human history of manipulating and subsequently trading, buying and selling animals. It is a commentary on the magnitude of anthropomorphism in American culture. However, Lifestyle Pets' "products" would undoubtedly strike a nerve with Haraway and Wolfe, postmodernist thinkers who have difficulty swallowing the concept that animals are a commodity, which will be discussed at length later in this paper.

Security and scent detection are realms in which dogs often excel, proving themselves to be biological machines that surpass the abilities of human-made technologies. Another realm in which dogs often outperform technology is in their service to the disabled or elderly. A significant amount of research has been done in the last few years focusing on dogs' presence in nursing homes. While nursing home residents likely form emotional bonds with these dogs, in this role dogs are also tools, encouraging elderly people to exercise, socialize and communicate. Not only do those close to the elderly subjects note marked improvements on these fronts, but data indicates that dogs' presence in nursing homes results in significant drops in healthcare costs for elderly people.

Sarah Knight and Victoria Edwards conducted a study that surveyed nursing home residents who were allowed to keep dogs, the results of which they discuss in their subsequent article, *In the Company of Wolves: The Physical, Social, and*

Psychological Benefits of Dog Ownership. Their results indicated a clear improvement in the physical, psychological and social health of the residents who lived with a dog. Knight and Edwards cite a long list of specific areas that noticeably improved as a direct result of dog ownership including: the dog acting as a catalyst for conversation and social interaction, reduction in the risk of stroke (by some estimations this risk can be cut in half through the employment of regular walking), reduced incidences of hip fractures, exercise as an antidepressant, a reduction in cognitive impairment such as the onset of Alzheimer's, and a general sense of previously absent well-being. Knight and Edwards believe this research to be important in part due to the ever-increasing elderly populations in the world as a whole and in part because many of these positive effects of dog ownership translate to other age groups and demographics.

A few Japanese companies are seeking to accomplish the same benefits with a different cost-benefit ratio. Because Japan has a disproportionately large elderly population (22.5 percent compared to America's 9 percent), the Japanese have been especially proactive in addressing issues specific to this population. Funded primarily by the Japanese government, Paro is an interactive animal-like robot modeled to look like a baby seal. It communicates pleasure when receiving attention and will cry out of it is being ignored. A hefty $3,800 price tag has thus far prevented it from becoming main stream, but in several trial studies its reception has been positive. Whether the positive effects compare with those observed in human/dog relationships remains to be seen.

The ways in which dogs and technology compete to fulfill roles as protectors, detectors, and aides are relatively more straightforward than the ways both compete and cooperate to fulfill another role: that of entertainment. This is due in part to the fact that often our entertainment is a combination of the two. At the time of writing, a search for 'dog' on YouTube returns over 17,000 results (meanwhile a search for 'technology' only returns 15,000). I have a dog photography business with an associated blog that gets several thousand hits per month. Most of these people will never be my clients; many of them live in foreign countries or states on opposite sides of the country, but they are entertained by daily photographs and video clips of dogs on the internet. Many of my clients regular send me photographs of their dogs, photos both taken and sent using their cell phones.

A host of other outlets successfully combine dogs with technology on a massive scale, from high-budget major motion picture films (such as *Beethoven* and *Marley & Me*), to reality television shows (such as National Geographic's *Dog Whisperer* and Animal Planet's *It's Me or The Dog*). Games, too, are a good example of this combination. A new Japanese arcade game challenges players to walk a dog and keep it from getting hit by oncoming traffic. Screen-based pet systems (such as Facebook's *Animal Farm*) and electronic pets (such as Zhu Zhu Hamsters™) are also animal/machine hybrids designed to entertain people.

Another interesting facet of the human-robotic and generalized human-machine communication is the design principles that guide the technology development. In a

paper out of the Massachusetts Institute of Technology, Bruce M. Blumberg explains the benefits of designing artificial intelligence that can learn based on the guiding principles of how dogs learn. He references dogs specifically because of the species' monumental success in cohabitating with humans. Blumberg explains that their basic computational model (learning "right" from "wrong" and seeking praise versus punishment) has set a standard as to what we expect from our pets—digital or not. Additionally, dogs are able to communicate fairly effectively with humans despite an enormous language barrier. Blumberg explains that not only do dogs totally fulfill the niche of man's best friend, but that they also enlighten man's view of himself positively. In other words, it is through their relationship with dogs that many humans see themselves in the best possible light.

That research is focusing on creating human-made machines that learn the way dogs do suggests an elemental connection between the way dogs learn and humans instruct. A research team headed by Juliane Kaminski at the Max Planck institute in Leipzig has conducted a series of yet unpublished studies that seem to indicate dogs' ability to understand human cues far outweighs that of wolves or apes. They seek to prove that instead of the long agreed upon notion that dogs were the dumbed-down versions of their wolf ancestors they are actually evolutionarily advanced creatures, changing over time to live with humans in an unimagined success. Studies conducted by Kaminski and her team show that dogs understand the most basic of human cues: if researchers place two upside down cups with a treat hidden under one and point to the

one with the treat even six-week-old puppies are able to choose the correct container. Wolves and apes, on the other hand, ignore human cues and are thus completely unable to successfully guess which container has the prize. Dogs are even able to read human facial expressions, and can actually identify the correct container with no more than a flick of the human gaze towards the correct one. Other recent studies point to the conclusion that dogs can also interpret human emotion by reading facial expressions and that dogs have evolved to have more expressive faces that appeal to humans.

In short, it is no accident that researchers such as Blumberg seek to understand the way dogs learn as they develop artificially intelligent technologies. Already released technologies that attempt to directly imitate dog learning, such as Sony's AIBO and Dogz™ (a screen-based computer game put out by UBI Soft) possess the most basic (yet believable) learning structure: praise encourages repetition of a particular behavior while punishment discourages the incidences of a different behavior. Blumberg is interested in pursuing the development of artificial intelligence capable of more than just a simple praise/punishment learning model. Reinforcement learning expects a machine to learn from its own experience, while Q-Learning refers to a more complicated type of learning that demands an understanding of a sequence of events and keys in order to reach a particular goal or solve a particular problem. Blumberg believes that by studying dogs' ability to learn and infusing synthetic characters with similar abilities they ultimately become more believable. After all, Blumberg writes, "in

the long run only Wile E. Coyote can get away with not learning from experience."
(Blumberg, 1997)

While dogs fulfill a host of human needs—and in many cases do a better job than technological devices designed to compete with them—there are many, many realms in which technology fulfills human desires in a way no animal ever could.   The borderline insane attachment many people develop to their mobile phones is a key example. This is an internationally prevalent technology that has infused the day-to-day, moment-to-moment lives of three billion people worldwide. In some ways this relationship mirrors the human-canine relationship: through the device people are seeking connection, interaction and security. According to a recent survey done by a company called RingCentral, when asked what responders could not live without, smart phone tied with "intimate relations." Other studies have noted that not only do people take their phones with them everywhere they go, but actually caress them (not unlike one would caress a dog).

We have established through Blumberg that imitating a dog's learning process can be valuable in creating artificially intelligent synthetic beings, but what of technology not designed to mimic dog behavior? An unbelievable amount of research goes into designing mobile devices for human use. From the most basic every day appliances (washing machines, dishwashers, refrigerators) to the ever-more complex mobile devices that are apparently becoming necessities for much of the modern world, their design is totally infused with what researchers believe to be the most intuitive way for

humans to interact with them. Many discussions surrounding this issue become philosophical in nature, including ideas of technological determinism versus a constructivist approach. Because technology has become such an intimate part of the human experience (indisputably for first-world countries, but also more and more for second- and third-world countries as mobile phones ownership and use skyrockets among lower income markets), it is impossible to address the issues surrounding it without understanding the basic principles of the constructionist versus technological determinism debate.

In his article *Technology and Behavior*, Jaap Jelsma addresses the constructivist versus technological determinism methodologies by explaining that the technological determinist approach suggests that the success of a particular technology is the explanation of its development. Constructivists, on the other hand argue that the opposite is true; the success (or failure) of technology is actually the result of a social process (and thus construction), not an immutable result of its specific characteristics. Henry Jenkins is a visible proponent of the idea that culture shapes technology, a point that comes up in the discussion later in the paper.

At the forefront of cell phone development, Jan Chipchase was a lead researcher for Nokia for several years, during which time he traveled the world—from the posh streets of London to remote villages in India—observing the ways people use their cell phones. In his March 2007 TED talk Chipchase notes that across the globe, across disparate cultures, and across financial demographics, people take several things

with them everywhere they go: their keys, their money, and their phones, and goes on to explain that these sacred items have "spiritual, emotional or functional value."

It was Chipchase's job not only to observe how people use their phones now, but to predict the ways in which people will want to use them in the future. In this vein, his research was dedicated to understanding how people will most intuitively access the information they need. Compare this kind of empirical and ethnographic research to the intimate, sometimes tumultuous relationship people have with their dogs. Dogs may have evolved to understand detailed human communication, but there was no Jan Chipchase of the dog, traveling the world and using his knowledge to create a dog better suited for human intuition.

CHAPTER THREE :: *Cultural Norms*

While Chipchase and other techno-researchers have been studying the cultural

effects of the dramatic increases in worldwide cell phone use (an estimated three billion

people have a mobile phone), other writers and thinkers have been looking at the

cultural effects of the American dog population increase. Here, too, there is overlap,

and both are incredibly relevant when considering the dog/digital/human cohesiveness.

For example, talking loudly on your cell phone in a coffee shop earns you public scorn

of the same intensity as pretending not to notice your dog defecate on the sidewalk. A

host of public spaces have created and then tried to enforce—sometimes successfully,

sometimes not—policies regarding limited use of cell phones. Museums, movie

theaters, libraries, doctor's offices, restaurants, and retail stores often try to restrict or

altogether prohibit public cell phone use in their facilities. Many of these same types of

establishments have reacted to increased dog presence with similar bans. Restaurants

and shops are now alert to the possibility that patrons try to sneak dogs in, and often

react with blaring signs.   It is not, in fact, uncommon to see signs on storefronts

prohibiting both cell phone use and the entry of dogs.

Dog wars on the topic of public space are being waged across the country. Jon

Katz talks about the tension surrounding use regulations of one of the few remaining

open spaces in New Jersey in his book, *The New Work of Dogs*; meanwhile Michael

Schaffer devotes an entire chapter of his book, *One Nation Under Dog,* to the hotly

contested Fort Funston and Ocean Beach open space areas in San Francisco. Schaffer

explains that the Great San Francisco Dog Wars have "convulsed the city's politics,

leading to several federal lawsuits, a 1,500-person march on city hall, and an array of

allegations that one or both sides of the conflict are guilty of racism, pollution,

homophobia, environmental extremism, child endangerment, Big Brotherism, and

puppy hatred." (Schaffer 2009, 43) Because many of the areas in question are also

protected wildlife areas, sometimes housing rare or endangered birds, the question of

leash laws becomes not only emotionally charged, but scientifically and politically

complex.

A similar battle is being waged across the country at Mills Reservation, a hilly

area bordering Montclair, New Jersey. It is one of the few remaining natural settings in

a sea of strip malls and housing developments, an extremely rare opportunity for the

dogs of New Jersey to run off leash. Like Fort Funston and Ocean Beach, Mills is

constantly a topic of debate, a seemingly endless tug-of-war between the proponents of

letting dogs run free and those with little-to-no sympathy for free-roaming dogs or their

owners. Katz describes how the non-leash supporters seem to be the more

determined; for them this is the last frontier. In an effort to avoid $150 tickets for

having dogs off leash, they have set up warning systems to alert other dog walkers on the premises. When sheriff's deputies arrive at Mills, people will shout warnings, whistle, or even use walkie talkies to alert others.

The human dominion and manipulation of the dog species has followed a strange curve: at first it was in people's best interest to breed dogs to think for themselves so that they were better equipped to function in their roles as herders, guards, hunters and retrievers. However, profound changes in American society over the last few decades dramatically changed what we ask of our dogs. Schaffer is one of many writers who talks about the "furbaby" phenomenon, in which dogs are no longer just dogs, but have instead become a strange sort of child-dog hybrid, at least in the mind of the "furparent." In 2001 83 percent of Americans referred to themselves as their dog's "mommy" or "daddy," up from 55 percent in 1995. The American Veterinary Medical Association found that 70 percent of dog owners consider their dogs to be a member of the family, and that just over 70 percent of Americans said that one of the key reasons they wanted to own a pet was that it was "like a child/family member." (Schaffer 2009, 18) Cary Wolfe's *Animal Rites* dedication reads: "For Sam, Pilar, Woody, Hugo, Wellston, and Oreo: family," with no distinction as to which family members are human and which are nonhuman. (Presumably Oreo at least is nonhuman).

46

Interestingly even the names Americans choose for their dogs reflect this transition. Where the predominant dog names in America used to be Fido, Spot and Fluffy now, according to VPI Pet Insurance, the most common dog names are Bella/Isabella and Jake/Jacob—which are also among the top names chosen for non-furry children, according to the Social Security Administration. The extent of the "furbaby" phenomenon is almost frightening; research seems to indicate that people are actually replacing children with dogs. People who do not have children are more likely to have a dog (or at least to spend money on said dog): in 2000 45 percent of pet products were purchased by people with no children; by 2007 that figure had risen to 70 percent. (Schaffer 2009, 19) The contributing factors to whether or not people choose to reproduce have no place in the scope of this research, but given the increasing dog population in this country—especially among single or childless people—it is not out of bounds to consider the possibility that some people are choosing to replace standard human-to-human relationships with their dogs. This replacement is chemically not as different as one may think. A recent study out of Azabu University in Japan discovered that when a dog gazes at its owner the oxytocin levels in the owner's brain increase. Oxytocin is the most vital social bonding hormone, especially present between a mother and her child. The "furbaby" phenomenon is not only evident in the buying habits of childless dog owners, but is actually explainable in scientific terms.

Central to the "furbaby" phenomenon is the human tendency to don nonhuman animals (or entities) with human-like characteristics. Schaffer writes,

47

"There's a single, defining tension at the heart of the whole $43-billion tab: a three-sided conflict pitting anthropomorphization versus atavism versus solipsism, the desire to treat pets as human versus the interest in allowing them to live as close as possible to what we imagine to be their natural state versus the less altruistic inclination to have the whole experience be easy for our human selves." (Schaffer 2009, 24)   Also at the heart of this tension is human exceptionalism, a recurring and hefty part of our pervading ideology, and an integral factor in how we create technologies and biotechnologies.

Human exceptionalism dictates that humans are superior to other beings due to their unique capabilities. It is a concept widely talked about in works central to themes of this paper, including both Donna Haraway's *Companion Species* and Cary Wolfe's *Animal Rites*. The concept originated alongside humans, but the earliest writing about it comes from the Bible, such as verse 1:26 in the Book of Genesis: "And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth." More secular instances of human exceptionalism involve evolutionary reasoning, explaining that people's unique ability to transform the evolution process to one of evolutionary aptitude indicates his superiority.   Regardless of the reasoning behind human exceptionalism, its key element is that it places humans squarely in the center, a sun around which everything else must revolve.

In the foreword to Wolfe's *Animal Rites,* Mitchell describes human exceptionalism is a way for humans to define themselves in opposition to otherness. "The reduction of the complex plurality of animals to a singular generality underwrites the poverty of a humanism that thinks it has grounded itself in a human essence, a stable species identity to be secured by its contrast with animality." (Mitchell 2003, xii) In other words, humanism is such an integral part of the human psyche because we define ourselves not by what or who we are, but what or who we are not. This is a problematic notion even within the standard parameters of human and nonhuman because it negates an authentic consideration of the nonhuman (the "other"), but it is also problematic when the scale of human and nonhuman becomes murky.

Human exceptionalism is a vital concept when understanding the human/dog and human/device relationships because in many ways it is the impetus for both. The philosopher Jacques Derrida explains human as "the whole anthropomorphic reinstitution of the superiority of the human order over the animal order, of the law over the living." Freud, too, had an approach to human exceptionalism. He suggested there were three great wounds to the narcissistic man who tries to abate a flood of panic by constructing himself a raft made of human exceptionalism. These three wounds included: 1) the discovery that Earth was not, as once was believed, the center of the universe, 2) Darwin's work on natural selection and evolution which placed *Homo sapiens* within the realm of other corporeal living beings, and 3) the unconscious, which unsteadies people's ability to rely on their conscious, reasoning mind. Haraway

suggests we add a fourth to this list: "the informatics or the cyborgian, which infolds organic and technological flesh and so melds the Great Divide as well." (Haraway 2008, 12)

The race for the human-made to outdo the God-made (or the reassurance that it cannot) is at the core of many of these issues. It could be argued that in some ways our culture has always reflected this essential tension, especially in times of great societal, capitalistic or political change (some would call it progress; others regression depending on which side of the political fence you reside). As the human ability to create more intricate, complex and invasive technologies increases and our natural resources decrease, this tension becomes ever more prominent. Most dog lovers will tell you one of the many reasons they appreciate their dogs is that dogs are a connection to nature. Dogs—though not immune—are impervious to human technological advances. Despite the fact that dogs are themselves a technology, and despite the fact that dogs are coconsumers of technology, they remain essentially dogs. There is some rock-like security about the scientific definition of what a dog is, and with that comes a certainty about the future. Dogs will be dogs; *Canus lupis familiaris* will forever refer to their specific, un-humanmade DNA sequence.

The term cyborg was originally coined in 1960 by Manfred Clynes and Nathan Kline who used it in reference to self-regulating human/machine systems in outer space. Cyborg generally refers to the union of organism and technology in varying contexts and degrees. Haraway's concept of the cyborg has been duly noted and long discussed

since her benchmark work *A Cyborg Manifesto: Science, Technology, and the Socialist-Feminism in the Late Twentieth Century.* In it she defines a cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction." In her newest manifesto, the *Companion Species Manifesto: Dogs, People, and Significant Otherness*, she again addresses cyborgs, only this time in a direct relationship with dogs:

> Cyborgs 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. (Haraway 2003, 4)

The blurring of lines has become an integral part of all of these dualities. What constitutes a dog, a person, and a machine, and wherein do these entities combine, remain separate or crash violently? Haraway's acknowledgment of the tensions these combinations bring up is poignant: these are tensions that are rooted so deeply in human psyche that drawing them out and identifying them is often tricky and obscure. Mitchell too addresses this blurring of lines and identities, both in the context of the us/them dichotomy and the manmade/nature dichotomy. This is "not merely the 'digital' or the 'information' age, but the era when the sciences of life and the technologies of computation have attained a new level of dialectical intensity, when the contradictions between 'sciences of control' (cybernetics) and eruption of the uncontrollable (the biosphere, typified by computer viruses) are rampant features of everyday life." (Mitchell 2003, xiii)

Almost fifty years earlier, Jacques Ellul addressed the same divide:

> Until recently we were obliged to think of man as divided in his relation to the technical world. One part of him was given over completely to the monster and subjected to the interior and exterior rules, but the other part he could keep for himself: his inner life, his family life, his psychic life. ... Many more aspects of the human personality have been exposed to the technical society, and today very nearly the entire human race is experiencing this progressive cleavage of personality. (Ellul 1954, 420)

Forget for a moment the dog element in all of this, Ellul touches on something major here, opening up a conversation about the human/machine tensions that have existed as long as the inception of the first machine. There has always been a human wariness about technological progression, a resistance from at least part of any given population juxtaposed with a very determined and committed belief in the power of any given technology from another (sometimes overlapping) part of the population. Fear of the unknown or unknowable is probably the root of our uneasiness with technology: limitless possibility means a high element of the unknowable, and that is something we have never really been very comfortable with. Mitchell draws out another facet of this tension, and that is the recent obsession and concern over nature "with a capital *N*," the result of growing anxieties about the future of the planet and its inhabitants.

Techno-philosophers have touched on many of these tensions in the latter part of the twentieth and early part of the twenty-first centuries. The famed Marshall McLuhan essentially believed that fragmentation was part of the very essence of machine technology. In his book *The Medium is the Massage*, McLuhan writes, "All

media work us over completely. They are so persuasive in their personal, political, economic, aesthetic, psychological, moral, ethical, and social consequences that they leave no part of us untouched, unaffected, unaltered. The medium is the massage. Any understanding of social and cultural change is impossible without a knowledge of the way media work as environments." (McLuhan 1967, 26)   Martin Heidegger, like McLuhan, noted long before anyone could have predicted just how pervasive technology would become in the daily human life, just how binding its constraints were. In his *Critique of Technology,* Heidegger writes that "everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it." (Heidegger 2003, p. 279)   In his 1964 introduction to *The Technological Society,* Jacques Ellul expressed his concern and discomfort over the current technological climate.

> In the modern world, the most dangerous form of determinism is the technological phenomenon. It is not a question of getting rid of it, but, by an act of freedom, of transcending it. How is this to be done? I do not yet know. That is why this book is an appeal to the individual's sense of responsibility. The first step in the quest, the first act of freedom, is to become aware of the necessity. The very fact that man can see, measure, and analyze the determinisms that press on him means he can face them, and by so doing, act as a free man. ... By grasping the real nature of the technological phenomenon, and the extent to which it is robbing him of freedom, he confronts the blind mechanism as a conscious being. (Ellul 1964, xxxiii)

The foreboding sense with which McLuhan, Heidegger, and Ellul addressed the issue may have been a little extreme, but it rings true to the human tendency to panic when facing the unknown. In many ways our intimate connection to technology has been greatly beneficial, perhaps encouraging more connectivity with other people instead of less. In fact, a recent study conducted by the Pew Internet and American

Life Project found that cell phones and the Internet have not increased social isolation in the U.S., at least not since the last survey of its kind in 1985. Instead, the study cites a number of ways in which these technologies have increased social connectivity, including involving people larger and more diverse discussion networks, actually encouraging people to use their technologies in public spaces instead of avoiding them, and helping people to stay in touch with those they are close to (days of phone contact with a person's core network on average is 195 days per year on a mobile phone versus 125 days per year on land lines). Vice president of Interpret Research, Michael Gartenberg said, "we have an unprecedented ability to communicate with people in real time, anywhere on the planet, from any place we are."

In conjunction with the fear of the unknowable is a discomfort with the human-made versus nature/god made paradigm. Ellul goes so far as to suggest that humankind is fundamentally maladjusted as a result of the prevalence of technology in daily life. "The human being is ill at ease in this strange new environment, and the tension demanded of him weights heavily on his life and his being." (Ellul 1954, 321) Schaffer notes this paradigm too as he explores the increase in dog ownership, suggesting that these deep seated human fears have flourished to full blown societal neuroses—"a fear that the modern life is wounding us, that we've gotten on the wrong side of Mother Nature." (Schaffer 2009, 197)

Here dogs enter the picture again, rushing to rescue of a culture drowning in technological advances. Through them we find a road back to our origins, a sense that

we have found a furry tie that will hold us tight to some kind of deep rooted natural

background. Haraway's *Companion Species Manifesto* is about that very complicated

relationship. In other words, it is about "the implosion of nature and culture in the

relentlessly historically specific, joint lives of dogs and people, who are bonded in

significant otherness." (Haraway 2003, 16) Haraway acknowledges otherness, but

without the constraints of a human exceptionalist stance, and in fact writes that "human

exceptionalism is what companion species cannot abide." (Haraway 2008, 165)

And yet, despite the ways in which dogs' dogness is untouchable and

unchangeable by human hands, in many ways they are as inevitably and irreducibly tied

to technology and digital media as we are. In *When Species Meet*, Haraway addresses

this tech/dog divide through Dan Piraro's *Bizarro* Sunday cartoon from 1999:
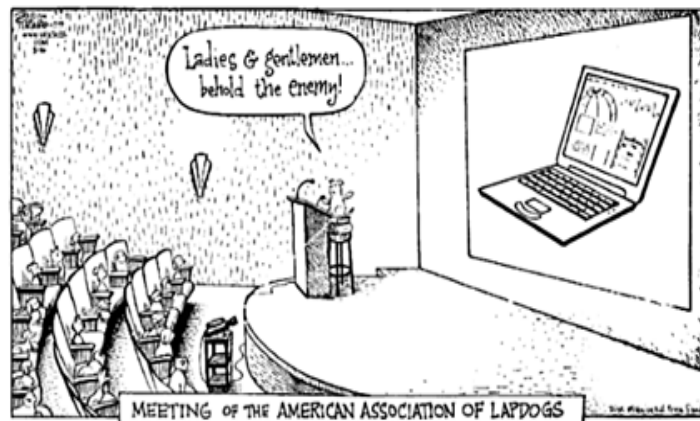
As Haraway points out, the lapdog/laptop juxtaposition points to what Bruno Latour

calls the Great Divide: nature versus society, nonhuman versus human. "Terrors are

regularly expressed in hyperphilias and hyperphobias, and examples of this are no

richer than in the panics roused by the Great Divide between animals (lapdogs) and

machines (laptops) in the early twenty-first century C.E." (Haraway 2008, 10) Haraway

would argue this panic is the result of human exceptionalism.

The panic Haraway refers to as a side effect of technology has been a very real

component of technological advances since we started to see devices become a part of

daily life. Touching again on the machine/nature paradigm and the panic that shrouds

it, Jacques Ellul's, *A Technological Society*, deals directly with issues of technology

(which he refers to as "technique") and the human, and the complications that

irreducibly ensue. Originally published in 1954 it deals largely with projections about

the future of the human/computer relationship as well as an analysis of the climate in

which he wrote it. Ellul's look at the year 2000 (human exceptionalism, *précisément*):

> The most remarkable predictions concern the transformation of educational
> methods and the problem of human reproduction. Knowledge will be
> accumulated in 'electronic banks' and transmitted directly to the human nervous
> system by means of codal electronic messages. There will no longer be any need
> of reading or learning mountains of useless information; everything will be
> received and registered according to the needs of the moment. There will be no
> need of attention or effort. What is needed will pass directly from the machine
> to the brain without going through consciousness. In the domain of genetics,
> natural reproduction will be forbidden. A stable population will be necessary,
> and it will consist of the highest human types. Artificial insemination will be
> employed. (Ellul, 432)

Ellul's predictions about education and the transmission of knowledge are

surprisingly accurate. Electronic banks do store most of our information; Wikipedia is

arguably the most vast encyclopedic collection of our time; Facebook the vastest

database of social connections ever; Amazon the most far-reaching marketplace that has

ever existed. While few would argue that there is no longer a need for attention or

effort, what amount of effort it takes to access knowledge is inarguably diminished (thank you, Google) and all of these systems are quite literally at our fingertips. The question of useless information might be another story altogether. The ease with which we access information probably has led to an incalculable excess of useless information.

As for Ellul's suggestion that by the year 2000 information will pass "directly from the machine to the brain without going through consciousness," one could make the point that that has indeed become a reality. Perhaps not literally—after all we are at least capable of choosing to be conscious of the information entering our brains—but we do absorb huge amounts of information without engaging our conscious minds at all. The endless hours people worldwide spend perusing Facebook on a given day must indicate a very low level of real consciousness or awareness. (The number of people globally who log on to Facebook each day is now at 175 million, according to a recent *Business Insider* figure).

Ellul's predictions about human reproduction pose some really fascinating questions about how far science and technology have brought us, and what that might mean for us, for our technology and for our dogs. The science fiction scenario he describes where only the most physically and intellectually fit people are allowed to reproduce has not become a reality—at least where people are concerned—but there has been a great deal of technological interference in the reproductive lives of people. In *Making Parents: The Ontological Choreography of Reproductive Technologies*, Charis Thompson considers capitalism as a motivator for what she calls a "biomedical mode

of reproduction." For Thompson, a lively capital has contributed directly to the proliferation of new technologies that have led us down a road of biomedical reproduction: the making of both parents and children through the subject- and object-making technologies of biomedically assisted reproduction. (Haraway 2008, 65) The discussion of biomedically facilitated human reproduction brings to light questions of body, mind and technology, and raises questions about where those factors meet and mingle. Also, biomedical human reproduction, especially in terms of Ellul's look at the year 2000, further breaks down the notion of human exceptionalism. In Ellul's view, only the best specimens are allowed to reproduce, creating a futuristic vision in which human exceptionalism has been replaced by a sort of super human exceptionalism.

While some elements of this super human exceptionalism are evident in human reproduction, almost all of them we impart on our dogs. We may not yet overtly manipulate the human gene pool, but we have been manipulating dog DNA for centuries, allowing only the "fittest" members to produce offspring. In the more socially aware and politically correct climate, dog breeding has found its stride with a strict protocol for what constitutes responsible breeding practices. Puppy buyers are dissuaded (often vehemently) from purchasing a puppy from a pet store because most pet stores get puppies from puppy mills, either directly or indirectly. Instead, those looking for a purebred puppy are encouraged to choose a "responsible" breeder, which usually means choosing a breeder that is recognized as a part of that breed's national or international club. Rhodesian ridgebacks are a good example of this practice because

58

the breed is still relatively new and rare, resulting in a governing body with significant

control over ridgeback reproduction around the country.

Here is how "responsible" and "ethical" breeding works today: the Rhodesian

Ridgeback Club of the United States (RRCUS) has an online directory of

recommended breeders who have agreed to adhere to the "ethical" regulations set forth

by the club. The RRCUS' self-stated mission (according to its website):

> RRCUS maintains the U.S. breed standard, a written description, that should
> create the image of the perfect Rhodesian ridgeback in the mind's eye: the way it
> should look, the manner in which it moves and the ideal temperament.
> Responsible breeders are those which always try to breed dogs to match the
> standard with no inherited defects.

Whether the Code of Ethics as set forth by the RRCUS is actually ethical is

another debate altogether. It not only specifies the standard to which dam and sire

must conform down to the last pound and inch, but it also gives guidelines as to how to

deal with puppies that do not, for various reasons, conform to this exacting standard.

Taken directly from the Code of Ethcis on the RRCUS website:

> Breeders shall require purchasers to spay or neuter any dog that is not
> considered breedable quality and make use of limited registrations where
> appropriate. When puppies with serious defects or faults (Dermoid Sinus,
> ridgelessness) are sold rather than culled, the breeder must take the extra
> responsibility to see that the dog is spayed or neutered.

The practice of culling puppies that are born without the customary ridge down

their back is apparently totally acceptable with the RRCUS, a practice that flies in the

face of popular animal rights doctrine. And yet the result is a dog breed that has been

unusually well regulated and therefore most specimens of the breed are formed well

within this genetic code, their proportions carefully crafted to appeal to human notions

of beauty and perceived functionality. The RRCUS' breeding guidelines bear a striking

resemblance to Ellul's prediction that natural reproduction will be forbidden (it is

unquestionably never allowed among dogs of any kind, but especially those belonging

to the exclusive ridgeback club), or that the population will consist of only the highest—

here Ellul refers to the human, but we shall replace that with dog—types.

Like Haraway, I am the owner/parent/guardian of an inferior breed sample. My

dog comes from one such "ethical" Rhodesian ridgeback breeder. She bears the

deformity of a structurally crooked tail, a defect she never and I rarely notice, but it was

enough for the breeder to be sure her genes were not suitable for the ridgeback gene

pool, and thus she was sold to me for $400 less than her "show quality" littermates. I

was required to sign a lengthy contract that included a spay clause. This sort of legally

binding contract is not unusual among the heavily invested purebred dog breeders of

the world, and it is not unheard of for breeders who discover puppy buyers not fulfilling

their end of the bargain to be sued, a practice that is less about the money, or even that

particular dog, than it is about the determined pursuit of breed quality regulation.

The discussion of ethics becomes especially relevant when we consider the

proliferation of highly dysfunctional dog breeds. Those breeds with the smashed in

faces that Americans have deemed cute are often unable to breathe properly at rest,

and many are physically incapable of breathing while exercising. It would take a cold

person not to feel bad watching a Basset hound that wants to run maneuver it's

strangely proportioned body with only moderate success. The dog who certainly does

not possess the faculties to understand why humans along the way thought it would be

nice to have a full sized dog with legs a quarter the length they should be. Or talk to

someone who has tried to housetrain a teacup Poodle or Chihuahua and you will

quickly note that in the quest to breed canines that can fit easily inside a purse we have

created a creature that no longer has the brain mass necessary to process simple

commands. In fact, the human hand in the progression (or regression) of dog breeds

has allowed some breeds to become so dysfunctional that they are physically incapable

of successfully reproducing on their own. Eighty percent of English bulldogs must give

birth via cesarean because the puppies are built in such a way that they are unable to

pass through the birth canal.

Where then does technology enter this picture? How do we reconcile human

exceptionalism and the technological consideration of dogs? Dog breeding is a

technological system that directly reflects both human exceptionalism and that the dog

species have paid a heavy price for their proliferation in human dominion. The dogs

that suffer these aesthetic ideals are no doubt a direct result of human exceptionalism,

and the breeding practices responsible for their ever-increasing populations fit Edmund

Russell's definition of biotechnologies: organisms shaped for functional performance in

human worlds; or "biological artifacts shaped by humans to serve human ends."

(Russell 2004, 16) Furthermore, dog breeding serves as a mini model for Ellul's

predictions about super human exceptionalism in regard to human reproduction.

The discussion of ethics beseeches a consideration of rights—what they mean,
who they belong to, and who can hand them out. The animal rights movement has
gained serious momentum in the last several decades, successfully passing far-reaching
legislation that protects and promotes animal welfare. In her book, *For The Love of
Animals*, Kathryn Shevelow takes a look at how animals went from being widely
considered "dumb brutes" to victims, beings that deserved our awareness and
protection. Shevelow believes the changes in animal rights over the last hundred years
are tied inexorably to various human rights movements, a point of view that is akin to
studies suggesting that empathy for animals and empathy for our fellow humans are
closely connected. The first instance of democratically passed legislature that dealt
directly with the protection of animals was the Ill-Treatment of Cattle Act, which was
passed in London in 1822, amid a great deal of often violent debate. The details of the
animal rights movements are not vital here, but rather the understanding that the
animal rights debate has been fighting a long and sometimes bloody battle. (Albeit
usually their blood, not ours). The really fascinating thing about the animal rights
movement is that it represents an unprecedented ability for people to recognize and

work to protect the rights and welfare of a nonhuman entity. It is a profound

recognition of otherness, which must inform in some degree our approach other

nonhuman entities.

Not surprisingly, most animal rights movements are put into motion by people

who deeply care for animals, but Cary Wolfe points out that animal rights actually has

nothing to do with whether or not people like animals. Throughout history, even the

boundary of human/animal has been sufficiently blurred to serve the purpose of

whoever happened to have the upper hand. Gayarti Spivak historically situates this

boundary:

> The great doctrines of identity of the ethical universal, in terms of which
> liberalism thought out its ethical programmes, played history false, because the
> identity was disengaged in terms of who was and who was not human. That's
> why all of these projects, the justification of slavery, as well as the justification of
> Christianization, seemed to be alright; because, after all, these people had not
> graduated into humanhood, as it were." (Spivak 1991, 229)

Humanhood is an illusory and selective club, one that allows its members to

bring in whomever they like and exclude whomever they dislike. This explains why

other members of the *Homo sapien* genus and phylum are sometimes excluded and

why, as in the case of the "furbaby" phenomenon, sometimes other species are

inducted. The fact that humanhood is a volatile label with ever changing rules once

again brings to light the problematic nature of human exceptionalism.

Within the animal rights movement there are different factions, that at times are

so adamantly set against each other that one could argue the new frontier of the animal

63

rights battle is between different factions of pro-animal protection.   The debate becomes one of philosophy, with some proponents who believe animals deserve them most basic, skeletal version of human rights: that they should not suffer. Other animal rights movements seek to treat animals the way humans like to (or should be) treated, a highly implausible proposition. The question of animal rights has been a pretty fundamental part of philosophy for thousands of years.

In the 13th century St Thomas Aquinas wrote that "through being cruel to animals one becomes cruel to human beings," which is still a cornerstone of some animal rights movements (and one of Shevelow's main points). It seems Aquinas was right: modern studies show a direct relationship between the way a person treats an animal and the way they treat another person. Children raised with a pet are more empathic than those who are not, and a 1999 study found that people who strongly dislike dogs score lower on the empathy scale (and higher on the measure of anal character) of the California Psychological Inventory, results that indicate "people who liked dogs have less difficulty relating to people." (Homans 2010)

A host of other famous philosophers have devoted at least some of their works to the issue of animal rights, from Aristotle's *Animals are for Our Use*, to Immanuel Kant's *Duties to Animals are Indirect*, to Friedrich Nietzsche's *Pity for Animals.* Arguably all of these works (along with countless others) have had a profound effect on animal rights movements, but it is Jeremy Bentham's response to René Descartes that

has become the backbone of much animal rights discourse: "the question with animals is not can they talk, or can they reason, but can they *suffer*." (Wolfe 2003, 67)

Wolfe devotes a chapter of *Animal Rites* to an analysis of Michael Crichton's *Congo* in which he constructs a "framework for thinking about the problem of subjectivity and species difference in terms of embodiment and multiplicity rather than identity." (Wolfe 2003, 169) *Congo* provides a window through which we can look at notions of humanity in direct contrast to animality. In the science fiction novel, a research team goes deep into the African jungle to investigate human-killing gorillas, bringing with them their own gorilla, Amy. Amy is able to communicate with both the research team (via sign language) and with other apes. Wolfe has this to say about the structure of the plot line: "...We can readily imagine a semiotic square in which 'human' means 'colonizing mimetic primate' and 'animal' means 'colonized mimetic primate.' On one side we find the 'humanized humans' of the ERTS party [the American research team] and the 'humanized animal,' Amy; on the other side are the 'animalized humans,' the Kigani [local African people], and the 'animalized animals,' the gray gorillas." (Wolfe 2003, 187) Wolfe uses Crichton's *Congo* to set up a framework in which we no longer see humans as just humans, or animals as just animals. Instead, each category has a subcategory, requiring a different kind of identity-making process and a new kind of self-reflection. This sort of boundary- blurring identity-making invites questions about rights on more fronts than just those of humans or animals: it begs the question of the rights of things.

While most people do not actually think their mobile devices deserve empathy, much less rights—unless you ask an AIBO forum member—the idea of rights for things is not as simple as it may seem. Our impractical attachment to our mobile phones indicates a definite degree of emotional attachment. Games that involve digital renditions of animals or screen-based creatures that are designed to elicit human empathy also foster emotional relationships with technological devices. However, the most simplified and direct instance of human empathy towards a digital device is in relation to robotics. The engineers of many robots build them with the express purpose of making it easy for people to relate to them. To create something mechanical that can elicit in people affection, interest and, ultimately, empathy is no small task. It involves a very detailed study of what movements, actions and reactions elicit specific reactions out of most people. It is in the realm of robotics that we strive to create something that most resembles us; conjuring the handy metaphor of God creating Jesus and humans in his image, and humans creating robots in their image.

The towel-folding robot, created by PhD student Jeremy Maitin-Shepard, is a really good example of a robot that elicits an emotional reaction in people.
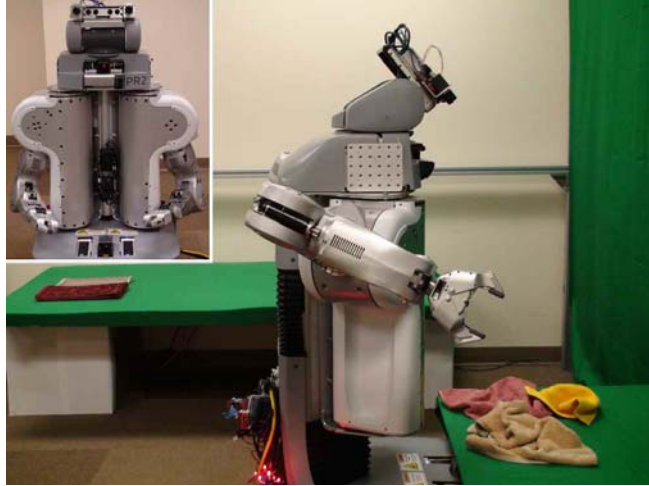
Maitin-Shepard's corresponding research paper mentions nothing about

anthropomorphism or human reaction to the towel-folding robot, and yet the YouTube

video of the robot has been widely circulated online because people identify with it.

Blogger Mike Migurski describes the anthropomorphism in the video clip:

> There is so much here. The "previously-unseen towel" part of the title, the slightly-femmy movements of the robot, the way the 50X speed-up makes it look like a Svankmajer film, the diligent care with which it smooths out each towel when it's done, and the palpable shock when it returns to the towel table and there aren't any left to fold.

This vocabulary is not representative of a cold objective approach to the mass of

cables, electronics and metal that comprise the towel-folder.   Words like "femmy,"

"diligent," "palpable shock" indicate that Migurski is relating—on some level—to the

robot.

In his 2010 film, *I'm Here: a Love Story in an Absolute World*, film director

Spike Jonze suggests a future in which human-like robots are able to think and feel. In

the film robots are depicted doing the jobs that people would rather not do. They work

during the day and recharge at night, and while they are able to think, talk, and laugh, they are treated as inferior by people. They are denied basic civilian rights, such as driver's licenses, and it seems clear that they are not paid for the work. The story centers around two robots that develop affection for each other, asking questions about whether these robots can in fact love. In the film, the robots are actually evolving, and are beginning to struggle with questions about meaning, and seek and find love.

Fictional though it may be, Jonze's film does raise questions about the kind of technology we are creating and what capabilities we impart on it (versus what capabilities it evolves on its own). Sidle from Jonze's obviously human-made robots over to the arena of Lifestyle Pets' genetically modified hypoallergenic cats and dogs, or to Animal Cloning Sciences' cloned versions of your favorite pet, and then ask yourself again about what constitutes technology, a cyborg, an imposter, and when and where do

we assign such beings rights. It is a complicated question, and one that necessitates consideration.

In the foreword to Cary Wolfe's *Animal Rites, W.* J. T. Mitchell, contemplates the rights of things. He writes that when the realms of zoology and botany, when issues of spheres of bioethics and biopolitics have been worked out, then it will be time to focus on the rights of things.

> This may sound like a whimsical notion, but in fact the rights of things are already much better established than those of plants or animals, and have been for a very long time. Whole classes of objects—works of art, religious icons, valuable commodities, private fetish objects, and public totems—already have a special status. The old ethical conundrum about rescuing a Rebrandt or an infant from a burning building makes sense only in a culture that already believes some objects have a strong claim to human protection, care, and loving attention. (Mitchell 2003, xi)

Mitchell's point is cardinal to the discussion of animal rights, because considering the rights of animals—or plants, or things—requires a stepping outside of ourselves and an acknowledgement of otherness. Mitchell points out that humankind has actually been keenly aware of the rights of things long before the Ill-Treatment of Cattle Act was passed in 1822. It is an acknowledgement of human nature, our need to possess, and the recognition that sometimes the preservation of things is important. Where technology enters the picture is in interactivity, in its ability and potential to actually increase the importance of things in human lives.   Mitchell's acknowledgement of the rights of things drives another nail into the coffin of human exceptionalism: where we acknowledge the rights of things, but not always of animals or people, it is

impossible to draw firm lines around human/nonhuman and who or what qualifies as a part of the human in a human exceptionalist stance.

The discussion of the rights of things and animals begets a conversation about language. Because none of the entities in the human/animal/technology equation speak the same language—at least, not entirely—all instances require translation of some sort. As is the case with any kind of translation, there is also a lot of miscommunication, an inability to transcend the linguistic barriers to achieve a desired or valuable outcome. Computers speak in code; dogs in body language and barks, and while both are very good at achieving communication with people, there are places where both tend to go awry.

The binary language of computers used to be so dense that they were highly inaccessible to the general population for a long time. Licklider identifies the language barrier as one of the more formidable hurdles between men and computers. "The basic similarity between human languages and computer languages may be the most serious obstacle between human languages and computer languages may be the most serious obstacle to true symbiosis." (Licklider 1960, 78) In the late 1950s and early 1960s computer language translation systems remained obtuse and slow, incapable of facilitating a real-time communication system for men and their machines. Licklider also identifies the importance of both parties understanding different components of language. Where computers specify steps and sequences, the human brain tends to

understand communication in terms of incentive and motivation—radically different concepts within the singular realm of language and communication.

By 1974 computers had been developed to the point where they were significantly better at tackling the issue of language, yet the majority of people were still daunted by them. This inaccessibility prompted Theodor Nelson's *Computer Lib*, a manifesto with the express mission of encouraging people's involvement with computers. The first line reads: "Any nitwit can understand computers, and many do." Nelson argues that those inside the computer industry benefitted from perpetuating the myth that computers were difficult to understand. "Knowledge is power and so it tends to be hoarded. ... Thus if we say that the use of computers is dominated by a priesthood, people who spatter you with unintelligible answers and seem unwilling to give you straight ones, it is not that they are any different in this respect from any other profession." (Nelson 1974, 304)

For Nelson, helping people to see past the language barrier was of paramount importance. When he wrote *Computer Lib*, computers had started to become integral parts of businesses, organizations and government, and as such Nelson felt people should be able to access them. Additionally, Nelson believed they had a lot to offer— not just in their utilitarianism, but also in matters of the heart, "whereby it makes pictures on screens ... strange inversions and foldovers of the rest of the mind and heart." (Nelson 1974, 305)

Over the last two or three decades there has been a lot of consideration given to the potentials of human/computer communication. Ben Schneiderman's *Direct Manipulation: A Step Beyond Programming Languages* explores the benefits of display systems that allow users to receive direct responses. The following quotation appears at the top of the piece:

> Leibniz sought to make the form of a symbol reflect its content. "In signs," he wrote, "one sees an advantage for discovery that is greatest when they express the exact nature of a thing briefly and, as it were, picture it; then, indeed, the labor of thought is wonderfully diminished." (Krieling 1968, 486)

This concept provides with a context, facilitating a better understanding of the immense success of programming environments today that are geared towards direct, non linear, or verbal responses. The blogging empire, Wordpress, is built on making HTML and CSS readily accessible to the average person. Adobe continues to develop and equip Dreamweaver with the ability to immediately display the results of the code being used, and programming environments such as Max/MSP geared towards right-brained users have made programming highly visual.

While a divide still exists between those who are well versed in code and the general public who find it daunting, there is a much larger cross over wherein members of the general public are able to teach themselves parts of languages. This ability gives a huge section of the global population unprecedented opportunities for expression and connectivity. The accessibility of information—the DIY movement that has only gained momentum since Nelson's *Computer Lib*—is responsible for instigating profound change around the world. The problem of language still exists, but both Licklider and

Nelson would be pleased with the changes in accessibility and problems of translation in the last fifty years.

The issue of language in regard to handheld mobile devices, and cell phones in particular, is nuanced, and is distinctly different from that of computers as a whole. On one hand, just about anyone can communicate with their phone. The command chains are designed to respond easily and quickly to the human mind, and everything is in plain English. (Or whatever language the user happens to speak). However, programming for phones remains significantly more elusive, requiring the user to have a command of languages such as Java, C++, and Objective-C. These languages are not as widely accessible as many of the web languages, such as HTML and CSS. Part of the reason programming languages for mobile phones are so obscure is the lack of more universal platforms, while programming languages for the web have been around longer and are far more universal. With time mobile phone languages will probably become more accessible to more people.

The effect mobile devices have had on our language is worth noting, too. Cell phones have invited acronyms to overtake everyday human-to-human language. What were once staples of small cultural pockets, WTF (what the fuck), OMG (oh my god), TTYL (talk to you later), and countless others have become nationally (and internationally) recognizable across different age groups, economic sectors and geographic areas. Twitter's 140-character limitation has generated a shift in the way people choose to update each other in social media. It has created its own language

73

that is widely understood among different demographics, too: RT (retweet), #
(signifying a Twitter-wide category) and the understanding that the @ symbol refers to
another Twitterer.

Where human/computer miscommunication often leads to a decrease in
opportunity and accessibility for the human component, human/dog communication
often results in a poorer standard of living (or abandonment) for the dog component.
The human/dog language barrier is immense, shrouded in misunderstanding and
miscommunication. The tendency towards anthropomorphization only encourages
miscommunication, and the dogs ultimately pay the price. Anthropomorphization and
the lack of any sincere attempt on the part of the human to understand the dog are
both staples of a human exceptionalist stance.

In her book, *Bones Would Rain From The Sky: Deepening Our Relationships
with Dogs*, author and dog trainer Suzanne Clothier seeks to inform her readers'
relationships with their dogs.   For Clothier the aim is to better help people understand
their dogs so that the dogs, in turn, will lead more fulfilling lives. She notes that
humans and dog have been trying to understand each other for roughly fourteen
thousand years, since the "First Dog crept up to the fireside." (Clothier 2002, 83)   Men
might have been trying to understand dogs—or rather, trying to get dogs to understand
them—for thousands of years, but it has only been in the last several years that the
scientific community has begun to recognize native language in dogs at all. Widely
accepted ideas about communication and language reserved language as sole invention

and property of *Homo sapiens*, off limits and barely understandable by other creatures. Haraway addresses this humancentric precedent, writing that "to ask if their [dogs'] cognitive, communicative skills do or do not qualify for the imprimatur of language is to fall into a dangerous trap. People always end up better at language than animals, no matter how latitudinarian the framework for thinking about the matter." (Haraway 2003, 234)

Changing notions of the parameters of languag in conjunction with new research in the arena of animal communication have begun to reshape popular thought on the matter. Mark Hauser, Noam Chomsky and Tecumseh Fitch wrote in an article for *Science* in 2002 the following about language in animals: "We argue that the available data suggest a much stronger continuity between animals and humans with respect to speech than previously believed."

Author and animal activist Temple Grandin has added her unique perspective to the debate as well. Severely autistic, Grandin has written and spoken extensively about her ability to connect and communicate with animals without the use of language or speech. For Grandin, like animals, thought and communication stem from "sensory modalities of knowing" and "thinking in pictures." (Haraway 2003, 371n42) Grandin seems able to connect with animals without the often—or perhaps totally—unnecessary filter of language.

Cary Wolfe's commentary on Grandin's work inspires a renewed consideration of the human/animal relationship in regard to a service dog and a blind human.

Wouldn't we do better to imagine this example as an irreducibly different and unique form of subjectivity—neither *Homo sapiens* nor *Canis familiaris*, neither 'disabled' nor 'normal,' but something else altogether, a shared trans-species being-in-the-world constituted by complex relations of trust, respect, dependence, and communication (as anyone who has ever trained—or relied upon—a service dog would be the first to tell you)? (Wolfe 2006, 2)

These new definitions and paradigms require a more worldly sense of what language is, how, when, and where it contributes to or detracts from communication, and who has the faculties to appropriate and use it. Research studies show that dogs are able to learn and remember the labels of over two hundred items, fast mapping abilities that are akin to that of a two-year-old child, but the learning of words is not really what is at stake here. Words are arbitrary.

Clothier's explanation of an exercise she often asks people to do at her dog training clinics gives the reader a keen appreciation for why and how human/dog communication so often goes awry.

> In some of my seminars, I have the participants play a little game I call Fruits and Veggies ... [which] offers a reminder of how much we take for granted in our communications, an empathetic experience of how the dog may feel and sometimes a surprising look at how our expectations can create problems. The rules are quite simple. Participants are split up into pairs, and each person is handed a slip of paper meant for their eyes only. On those slips of paper are three simple behaviors well within the ability of the average person, such as "hop," "blink," "take off one shoe." The goal is for each person ("the trainer") to teach their partner ("the dog") to perform these three behaviors. There is one catch: They may only address their partners using the names of fruits and veggies. All normal English is abandoned. ... The trainers may use any technique they care to (except painful ones), but they must not take advantage of the human tendency to mimic or mirror what is shown. ... (While dogs are an allomimetic species, meaning that they will imitate the behaviors of others, dogs tend to reserve this for actions that are natural and enjoyable to them). ... Trainers must somehow shape and encourage that behavior without offering an example. The "dogs" are free to act precisely like an off-leash dog—if bored,

they may wander away; if threatened, they are free to yelp or growl (no biting allowed).

> Quickly participants discover one basic truth about communication: It is most successful when the words you use are ones that both understand. Faced with "Grape!" or "Carrot" or "Rutabaga," the dogs are often very, very confused. Diligently, they search the trainer's face and gestures for clues as to whether "Apple" is a command or is meant to dissuade or is offered as praise. The word itself has no meaning: it is the full context of body language that gives the word meaning, just as our real four-legged dogs come to understand "Good dog" as praise and "Stay" to mean don't move. ... Of course, when we know what we mean in using a word, we often slip into the assumption that the listener—ourdog—also does. "Heel" and "Down" are just as nonsensical to a dog as "Peach!" (Clothier 2002, 89)

While scientists around the world continue to push the envelope as far as the ways technology can help aid in the human/dog communication barrier, it has remained largely ineffective. Gimmicky gadgets, such as the LED Dog Tail Communicator™ that is supposed to translate the speed of the tail wag into human words which are then spelled out with the LED light, are mildly entertaining but hardly reliable sources of information. Other research in the field has been somewhat more academically based and has resulted in more interesting results. Researchers Csaba Molnár from Eötvös Loránd at the University of Hungary are developing a computer program that is able to analyze the acoustic features of dog barks and then compare those results with information about the context and individual dog to then translate what the bark means. Their premise is that computer programs are highly effective at translating other animal communication (especially notable in regard to sea mammals). The algorithms Molnár and Loránd developed were able to correctly distinguish the category of dog bark ("stranger," "fight," "walk," "alone," "ball," and "play") 52 percent of the time, which, according to the researchers, is more reliable than a human's ability

to correctly identify the same barks. The researchers do not include much detail about what kind of human interpreters they were using, nor did they differentiate whether human interpreters were bad at determining specific acoustic frequencies within different barks, or unable to understand the meaning of different barks within their original contexts. The authors conclude the study is valuable, writing that "the use of advanced machine learning algorithms to classify and analyze animal sounds opens new perspectives for the understanding of animal communication... The promising results obtained strongly suggest that advanced machine learning approaches deserve to be considered as a new relevant tool for ethology." (Molnár, et. al. 2008)

Because handheld mobile devices are designed to be easy to communicate with, and despite the fact that dogs have evolved to better understand us, dogs are still a disparate species with a distinctly nonhuman way of looking at the world. It is one their most alluring qualities to some, but can be simultaneously completely and utterly frustrating. As technology has become increasingly intimate, it seems there is a growing expectation for an ease of communication with people and their dogs. It is as though an expectation exists that a dog is a commodity, too. In many ways American lives are standardized, full of norms that mandate flat screen televisions, smart phones, and iPods, and laptops— tehcnological versions of the archetypical white picket fence. It is as though it never occurs to many people that a dog is not simply another addition to that list of modern cultural linchpins. Through Clothier's Fruits and Veggies game it is possible for anyone to understand just how the communication goes so wrong, and why

millions of dogs end up in rescues and shelters each year because ill-prepared (though not necessarily mal-intentioned) people have created behavioral problems.

In many ways it is more reasonable to expect machines to respond to human communication effortlessly, but when we talk about human/canine communication we enter a different sphere. Haraway's definition of the term companion species leaves the "species" component purposefully open ended, but for Haraway there is something uniquely engaging and meaningful about animal species, and dogs in particular. They facilitate a relationship through which people are able to engage with a significant other.

I think the sixth day [of creation in Genesis 1:24-31] is where the problem of joint mundane creaturely kinship versus human exceptionalism is sharply posed…We have plurals of kind but singularity of relationship, namely, human dominion under God's dominion….There is no salutary indigestion, only licensed cultivation and husbandry of all the earth as stock for human use. The posthumanities—I think this is another word for "after monotheism"—require another kind of open.

--DONNA HARAWAY, *COMPANION SPECIES*

This is not simply a discussion of the ways technology and dogs compete for the same roles, or how they have impacted our culture in surprisingly similar ways, or even how they are both profoundly and inexorably linked together throughout American history over the last five decades. This is discussion that asks the reader to consider the ways in which our technologies and our dogs require us to reconfigure a sense of otherness. The reader is asked to understand human exceptionalism in all of its varying degrees and implications, and then to acknowledge that it is a capricious notion, and one that has no place in an open world view. Furthermore, as technology and dogs both become ever more a part of our most intimate lives, the notion of human exceptionalism becomes ever more problematic.

Cary Wolfe's *Critical Environments*, a rumination of posthumanist theory, explains that current theory has "wound up reinstating 'a rigid divide between the human and the nonhuman' that leads to a pervasive 'cultural solipsism.' So it is that 'theoretical moves aimed at ending the Human end up making human culture the measure and meaning of all things, in a kind of unfettered anthropomorphism.'" (Wolfe 1998, xv) This is an echo of the very same humanist-inspired anthropomorphism that Schaffer uses to explain the "furbaby" phenomenon. It is an echo of the same humanist-inspired anthropomorphism that frames the way we think about Spike Jonze's robots.   The very definition of the word *anthropomorphism* (which, according to Merriam-Webster is an "interpretation of what is not human or personal in terms of human or personal characteristics") requires its user to be a human exceptionalist. It implies a kind of egocentric and humancentric view that leaves little, if any, room for a revolutionary concept of otherness. That we live with nonhuman animals is not a new concept, but what is new is the *way* we live with nonhuman animals: in our houses, in our bedrooms, in our beds, under the covers. We give them their health, our hearths, and our hearts.

From Haraway's "Notes of a Sports Writer's Daughter":

> Ms Cayenne Pepper continues to colonize all my cells—a sure case of what the biologist Lynn Margulis calls symbiogenesis. I bet if you checked our DNA, you'd find some potent transfections between us. Her saliva must have the viral vectors. Surely, her darter-tongue kisses have been irresistible. Even though we share placement in the phylum of vertebrates, we inhabit not just different genera and divergent families, but altogether different orders.
> How would we sort things out? Canid, hominid; pet, professor; bitch, woman; animal, human; athlete, handler. One of us has a microchip injected

under her neck skin for identification; the other has a photo ID California driver's license. One of us has a written record of her ancestors for twenty generations; one of us does not know her great grandparents' names. One of us, product of vast genetic mixture, is called "purebred." One of us, equally product of a vast mixture is called "white." Each of these names designates a racial discourse, and we both inherit their consequences in our flesh.
(Haraway 2003, 2)

Haraway asks us to think about the human/dog relationship in an unprecedented way. It is not a simple question of us versus them, human versus animal, or owner versus master. She questions every fold of this complicated relationship, including the language we use to describe this interspecies relationship. "The term *companion species* refers to the old co-constitutive link between dogs and people, where dogs have been actors and not just recipients of action." (Haraway 2003, 134) While acknowledging the primordial nature of the dog/human relationship, Haraway finds new language to describe and inform a complicated story.

For Wolfe, this new terminology pertains to and is necessary for the human relationship to technology, too. Haraway holds that "our current moment is irredeemably posthumanist because of the boundary breakdowns between animal and human, organism and machine, the physical and the nonphysical." (Haraway 2003, 151-55) Wolfe explains this triple hybridity with the example of the U.S. Navy's Marine Mammal project in which highly trained bottlenose dolphins (human/animal) are fitted with video apparatuses (organism/machine) to locate underwater objects and beam their location back on the Cartesian grid of satellite mapping (physical/nonphysical). (Wolfe 1998, 44) The triple hybridity demands the inclusion of technology *and* animal as

nonhuman, and suggests that both should be reconciled through a heightened awareness of otherness. The relative explosions of dog populations and mobile device ownership in America have made this awareness especially relevant.

The ubiquity and intimacy of each side of the Great Divide require a new kind of openness. There is no room for human exceptionalism, no room for an erratic humanhood that inducts and excludes members capriciously. The parallel progressions of the dog and the digital in America over the last fifty years points to the idea that both are filling similar gaps in daily human life. The simultaneous proliferation of the dog and the digital are direct responses to the great suburban sprawl, changing notions of what constitutes family and a climate that widely accepts the disintegration of a nuclear family, and the relationship between increases in physical space between people and the resulting feelings of isolation and fragmentation.

The answer to the long-standing evolutionary mystery of what early people stood to gain from his relationship with dogs (no need to wonder what the parasitic canine was getting out of the deal) might not answerable in Darwinian terms. The answer has to do with the human need to be needed, need to love and feel loved in return, and his need for emotional connection. All of these intangible benefits are related to the human obsession with technology. Yes, there are other reasons we acquire technology. It makes human lives easier; it endows us with powers of supreme functionality and connectivity. But none of those reasons come close to explaining why we feel an almost insane need to have our mobile phones with us at all times. One last look at the

numbers: 152 billion Americans subscribe to cell phone service; 60 million Americans have at least one dog in their homes; more than half of those dogs sleep in their beds at night. It is not difficult then to guess how many millions of Americans sleep every night with their dog on their left, their cell phone on their right: the perfect physical manifestation of Wolfe's triple hybridity, and the reason Haraway hopes to bridge the Great Divide with a new kind of otherness.

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APPENDIX A :: *Dogs and Devices*

My dog photography blog has a relatively large readership, and I was interested in using the associated social networking tools (the blog itself, Facebook, and Twitter) to collect images from my readers of their dogs and handheld mobile devices. I suspected many of them worked and/or relaxed with both their dogs and devices in close reach. Here, in no particular order, are some those submissions; an interesting representation of the hybridity around which this paper centers.

submitted by Alex Jimenez

© Claire Bow
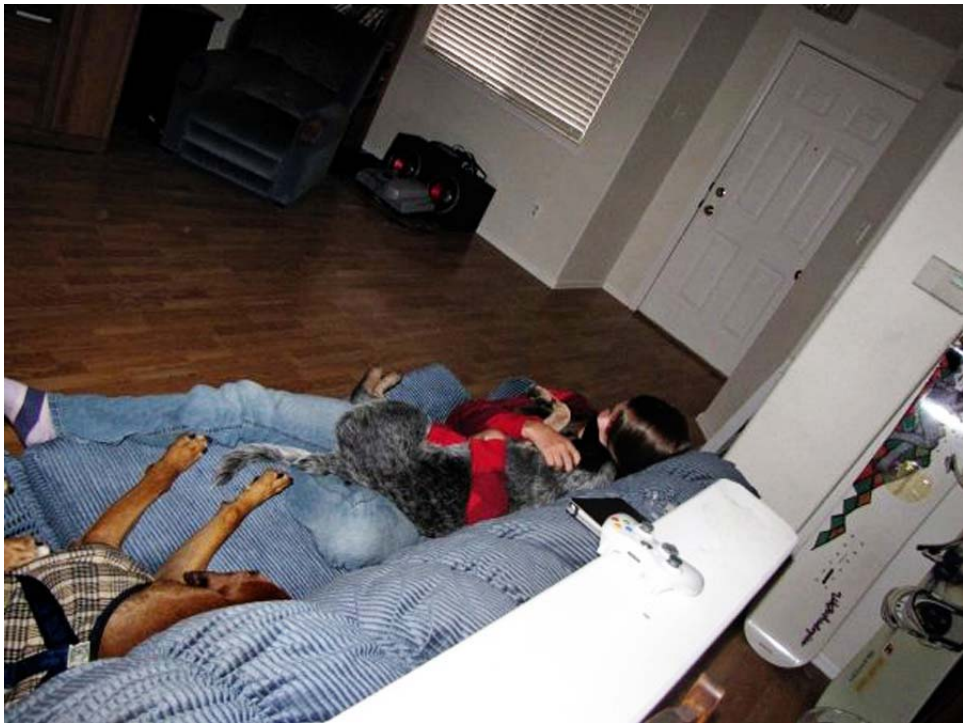
submitted by Nadia Dormer

submitted by Todd Roeth

submitted by Joe Cox

90

submitted by Samantha Mencini

submitted by Megan Cowan

submitted by Shelly Gubereck

APPENDIX B :: *Electronic Companion*

Throughout the writing of this paper, I have maintained a blog to serve as an electronic companion to this work. The blog contains photos, articles, quotes, videos, and links that are either mentioned specifically in this paper or pertain directly to topics discussed here.

The blog can be viewed online at: http://dogsandtechnology.tumblr.com/