

Daniel Elstein  
 Paper for the Animal Liberation Philosophy and Policy Journal  
 June 6, 2003

## Species as a Social Construction: *Is Species Morally Relevant?*

*Washoe was cross-fostered by humans. She was raised as if she were a deaf human child and so acquired the signs of American Sign Language... When Washoe was five she left most of her human companions behind and moved to a primate institute in Oklahoma. The facility housed about twenty-five chimpanzees, and this was where Washoe was to meet her first chimpanzee: imagine never meeting a member of your own species until you were five. After a plane flight Washoe arrived in a sedated state at her new home... When Washoe awoke she was in a cage... When she began to move, the chimpanzees in the adjoining cages began to bang and scream at her. After she regained her senses her human friend asked in sign language what the chimpanzees were. She called them 'BLACK CATS' and 'BLACK BUGS.' They were not like her and if she felt about them the way she felt about cats and bugs they were not well liked. Washoe had learned our arrogance too well.*

*-Fouts and Fouts in The Great Ape Project, 28-29*

Washoe was brought up in an environment in which there was a strong distinction made between humans and “animals”- and Washoe did not think of herself as an animal. She identified herself as a human, because of the social conditions in which she was raised. Certainly her belief that she was fundamentally different from the other chimpanzees and other animals was not *natural*. Had Washoe been raised by other chimpanzees, perhaps it is the humans whom she would see as “black bugs.” One of the many lessons of this passage is that the social influences of human societies are so powerful that they can influence even a biological chimpanzee to believe that there is a fundamental gulf between herself and members of “other” species- even when the “other” species is, by our lights, really her own. Is it surprising that so many humans feel the same way?

Washoe's case is very revealing of the social construction of our concepts of species difference. Some people might instantly reject the idea that the species concept is a "social construction," by claiming that "species" is strictly definable or that species distinctions are a biological fact independent of our own interpretations. Although both of these claims will be disputed in this paper, Washoe's behavior shows that a refutation of these claims is not even necessary for arguing that the species concept is socially constructed. This is because the notion that most of us, including Washoe, have of species difference is simply not reducible to any set of real qualities. It is one thing to offer a definition of species; but it is another matter to offer a definition of species that correctly describes the notion that we *really have*. Washoe could have looked at her own arm and seen that it resembled the arms of the other chimpanzees more than the arms of the humans. But at that moment, it is likely that no empirical fact could have convinced Washoe that she was *not* essentially different from these so-called "black bugs."

Just as Washoe's belief that she was essentially different from the other chimpanzees was not natural, neither was it based upon rational considerations such as empirical observations. It was a prejudice. In the case of Washoe, the prejudice is easy to isolate and criticize. Our own prejudices about species difference, however, cannot be isolated as easily. When we look at our own arm, it really does look more like the arms of other humans than the arms of chimpanzees. But ultimately, our situation is not really so different from that of Washoe. *Though certain empirical differences that we perceive may be real, our concepts of species difference go far beyond the extent of these real, describable differences.*

In what follows, I will argue that the concept of species is socially constructed in significant ways. This will mean that speciesism, or the doctrine that species *in itself* is a characteristic that can justifiably be used as a criterion for discriminating between individuals, cannot be valid. I will argue that speciesists tend to see species as a concept that marks essential natures and boundaries, and they use this fiction in forming moral judgments about individuals. I should preface this by saying that it seems to me that such an argument is unnecessary. It is an implicitly accepted fact amongst the majority of philosophers that the burden of proof always lies on the side of the philosopher who wants to argue that a quality *is* morally relevant. Those who want to argue that language ability is morally relevant, for instance, will give reasons for their position (whether adequate or inadequate)- they will not simply challenge their opponent to prove them wrong. Most philosophers on both sides of the animal rights debate, with some exceptions, have followed this common-sense notion and accepted that until someone presents an argument that species *is* morally relevant, we should go with the default position that it is not. It is for these few exceptions that I am writing this paper and presenting a positive case against the moral relevance of species.

Once the origins and meanings of the concept "species" are revealed, it becomes clear that there is no such thing as species that transcends its aggregate parts. If the aggregate parts are not relevant to morality, neither is species; and species can only be morally relevant in the ways that its component parts are. Species has no essential "core" nature. Therefore, to make moral distinctions based on species *in itself*, without reference to what species consists of, is to make moral distinctions based on nothing. In other words, it is to commit Washoe's fallacy. It seems to me that this is a sufficient reason for

both ethical realists, and all but the most extreme ethical relativists, to give up any conviction that species may be morally relevant.

This does not, however, mean that we should never make moral decisions based upon our socially constructed notions of species. What it *does* mean is that we should never make moral decisions based upon *species*. These are different: the social construction of species is real; it is the reality of species itself that is under examination. There are practical reasons for taking social constructions into consideration in our moral reasoning. Ideas can exist without referring to things that are real. Likewise, ideas can be morally relevant without their referents being morally relevant. An insane person may believe he sees a unicorn, and his belief is morally relevant in that it gives us reason to medically treat his hallucinations, to calm him down if he is frightened, etc. But this certainly does not mean that the nonexistent unicorn he sees is either real or something to be taken into consideration in our moral judgments. It is the idea, not the unicorn, that is morally relevant. Furthermore, it is possible for the man's illusory idea to correlate with something real in the world. Suppose the man thinks he sees a unicorn every time a bulldog walks in front of him. The existence of the bulldog can be taken into consideration in our moral judgments (keep small children away, etc.). Therefore, the man's illusory idea is correlated with something real in the world that is morally relevant (i.e. the presence of a bulldog). But this of course does not mean that unicorns are morally relevant.

Similarly, no animal rights philosopher claims that our *perceptions* about species differentiations, *or* the real patterns with which they correlate, should not bear on our practical moral decisions. Peter Singer, for instance, states explicitly in Animal

Liberation that pigs are not to be given the right to vote, because it makes no sense to speak of giving pigs this right. So it is important to realize that the charge of "speciesism" does not apply to the recognition and moral consideration of real patterns that correlate with our concept of species. This allows us to avoid the parallel problem of being called sexist for discriminating against one of the sexes based upon real differences between men and women; or being called crazy for keeping small children away every time the delusional man starts yelling about unicorns (since this gives us reason to believe there is a bulldog in the room). Singer's example in this case is that it is not sexist to deny men the right to an abortion, since men are not biologically equipped to have one.

### **How Species Distinctions are Socially Constructed**

*I look at the term species as one arbitrarily given for the sake of convenience to a set of individuals closely **resembling** each other, and that it does not essentially differ from the term variety.*

*-Darwin, 1859, 52, (emphasis added)*

When I say that species is socially constructed it does not imply that differences between humans and non-humans do not exist (e.g. we are taller than hamsters). Nor does it necessarily imply that species concepts are useless in science, everyday language, or even in philosophy. Indeed, the concept has been constructed largely because it is often found to be useful within certain contexts. And further, it is very likely useful because there are patterns in the world that loosely map onto many of our common conceptions of species. In part, evolution can explain the patterns that we see. Geographical and genetic isolation *tend* to lead to greater differences between, rather than within, groups of organisms- but not always. In fact, there is no "objective" way to decide what is a significant enough "gap," and this is further complicated by the fact that we are

dealing with an almost unlimited number of characteristics. To quote one biologist, “How similar is ‘similar enough’ and in what sense of ‘similar’?” (Hull, pg. 35 in *Species*) To a large extent, the patterns that we see will depend upon what we find useful for our purposes. But what is useful or “convenient” in one context may be detrimental or even nonsensical in another. Historically contingent forces have played a significant role in shaping the species concepts that we have in the West, and therefore the concept is meaningful only within certain contexts.

Species concepts are interest-relative. This is true within the field of biology and beyond. Robert A. Wilson writes in *Realism, Essence, and Kind: Resuscitating Species Essentialism*:

It is widely accepted that there are strong objections to the claim that any of [the] proposals-pheneticism, reproductive views, or genealogical views- are adequate... The different species concepts reflect the diverse biological interests of (for example) paleontologists, botanists, ornithologists, bacteriologists, and ecologists, so these concepts depend as much on our epistemic interests and proclivities as on how the biological world is structured. (Wilson, *Species*, 192)

Biologists whose main interest is in evolution tend to use species concepts that focus on evolution; ecologists tend to use species concepts that stress ecological niches; biologists interested in morphology focus on morphological characteristics in their species concepts, etc. Thus there is currently no universally accepted species concept in the scientific community.

Biologists have their own uses for their own species concepts, and for laypeople species distinctions serve as a convenient way of describing collections of large numbers of variables. The question is whether “the species concept” is ever useful in moral philosophy, and if so, when? In asking this, *which* species concept we mean is automatically in question. Is it the everyday-language concept of laypeople, and if so, whose? Or is it one of the more than a dozen species concepts currently held by

biologists? Anyone who argues that “the species concept” is useful in moral philosophy must first specify which species concept they have in mind. One cannot simply say "species" is morally relevant as if the term has some precise and obvious meaning- as if species were some sort of essential thing that needs no explanation, because it is God-given and beyond question.

For instance, the philosopher Carl Cohen writes:

We incorporate the different moral standing of different species into our overall moral views; we think it reasonable to put earthworms on fishhooks but not cats; we think it reasonable to eat the flesh of cows but not the flesh of humans. The realization of the sharply different moral standing of different species we internalize... In the conduct of our day to day lives, we are constantly making decisions and acting on these moral differences among species. When we think clearly and judge fairly, we are all speciesists, of course. (Cohen, 62)

I would first note that Cohen is using the term "speciesist" incorrectly, since he is talking not about the importance of "species" but about the importance of qualities that are correlated with our perceptions of species. His argument is therefore irrelevant because it ignores Singer's point that individuals of different species (and individuals of the same species) should be treated differently insofar as they have morally relevant differences- just as men have no right to an affordable mammogram and wealthy white men have no right to the benefits of affirmative action. But what I really want to draw attention to is the question, what does Cohen *mean* by "species"? One might think that it would be giving Cohen the benefit of the doubt to just name one, preferably one that is accepted by many experts. Let's suppose, for instance, he is talking about Mayr's biological species concept, which defines a species as a group of individuals capable of interbreeding and producing fertile offspring. But surely Cohen does not believe that when we "are constantly making decisions and acting on these moral differences among species," we are making our decisions based upon matters of who is capable of breeding with whom. For, not only do we not need to know any information about the mating capabilities of

these animals to make moral distinctions between them; most of us wouldn't even know what to do with this kind of information if we had it!

So perhaps Cohen means a "commonsense" concept of species. That is, what is morally relevant are the distinctions that we are all capable of making simply *by looking*, with no scientific or philosophical training. What is morally relevant, in other words, is appearance. Yet I doubt that when Cohen wrote this passage he had *appearance* in mind as a morally relevant characteristic. For Cohen, unlike Darwin, the difference between humans and other animals is not merely one of degree, but one of kind. It is difficult to imagine how Cohen might hold this essential difference of kind to be based upon appearance. More likely, he would probably claim that we make distinctions between species based upon appearance, but it is not the appearance that is morally relevant but *something else* that is inevitably correlated with appearance. For instance, we distinguish between worms and cats based upon how they look, but the morally important distinction is 'something else' that is correlated by appearance.

But unless someone can tell us what this 'something else' *is*, it is only prudent to assume that it is a "vivid illusion," as biologists Frank Keil and Daniel Richardson argue in "Species, Stuff, and Patterns of Causation" (Keil and Richardson in Species, 273). And remember, this 'something else' cannot be intelligence, self-awareness, language, or capacity for suffering, because then *those* properties would be the morally relevant characteristics- but no one argues that they are equivalent to "species." *This 'something else' must simultaneously satisfy at least two conditions, which I believe is impossible. First, it must correspond with what we really mean when we talk about species, and second, it must at least be plausible that it is really the basis of our moral distinctions*

*between supposed species.* Mayr's biological species concept and species concepts based on genes or DNA, for instance, do not satisfy the second condition. And properties like rationality and language do not satisfy the first condition.

In other words, my main reason for saying that species is socially constructed is that we often unconsciously argue as if species has an essence; as if there is something about species in the background that can not be described, but which can simultaneously satisfy both the first and second condition. Given the basis of any species concept, few would argue that *that* basis is morally relevant in any significant way. Given the basis of Mayr's biological species concept, few would argue that whom we have the ability to mate with is a relevant characteristic for determining how much moral consideration we should be granted (Lewis Petrinovich may be an exception, though his work is not altogether clear on the matter). Given the major basis of commonsense notions of species, few would argue that how we look should determine how much moral consideration we should be granted. Why, then, do some philosophers hold that our *species* can determine how much moral consideration we should be granted? I believe it is because they do not equate species with any biological or commonsense way of determining species. Rather, they are probably committing Washoe's fallacy, thinking of species membership as some essential characteristic of an individual that, in reality, does not exist.

Biologists and philosophers of science have had a tremendous amount to say about species, and much debate has ensued on this topic. But in nearly every philosophical discussion of animal rights (with some notable exceptions), the concept has been unanalyzed and taken for granted, as if the "problem" has been solved. The use of the term "species" within the philosophical context of *animal rights* has hardly been

addressed at all. Why is this? That is, why do philosophers feel comfortable discussing questions of the moral relevance of species without first asking what species *is*, or what we *should mean* when we talk about species in the context of animal rights?

In the 19th Century, Charles Darwin refuted the prevailing Western view that the world was naturally divided into essential categories of plants and animals. Formally, his discovery radically altered our understanding of the workings of nature. It taught us not to see the world as Aristotle did: as divided into essential natural kinds with inherent separations between masters and slaves, men and women, and humans and animals. But, often unconsciously, the pre-Darwinian worldview of essentially existing species continues to drive many of our philosophical and moral attitudes. We have abandoned the Aristotelian tendency to believe that some humans are naturally inferior, *because of their essence*, to other humans. But we have not yet done this in our beliefs about nonhuman animals. Biologists Keil and Richardson write, “We have a strong bias towards essences in living kinds.” (Keil and Richardson, 273, in Species) This bias is not easily dispelled, especially given that it has been ingrained in Western culture since Plato.

The concept of species holds argumentative “weight” in animal rights debates largely because it is viewed as an essential category, whether consciously or unconsciously. Most of us now “know,” or claim to know, that different species do not have distinct essences, but we still think and argue as if they do. And if, in the back of our mind, we still hold a conviction that species have essences, it would never occur to us to ask the question “what is species?”- it just is what it is, we imagine. Of course, Darwin too found the question “what is species?” meaningless, calling species “indefinable” and mocking his contemporaries for trying to find a definition that could be universally

agreed upon by people with diverse uses for the term (Darwin, 1887, 88, quoted in Ereshefsky, 285 in Species). But it was indefinable for Darwin not because species have essences, but because, for Darwin, species-talk is nothing more than a convenient conceptual tool for biological inquiry. In contrast to a long line of Western thinkers following Aristotle, Darwin recognized that no divinely determined invisible walls, no Platonic forms, separated one group of animals from another.

It is only because the species concept in animal rights debates has not been thoroughly deconstructed that philosophers like Cohen are able to rely upon it in their philosophical arguments against animal rights. At one point in time, this was also the case with race. Racists may claim that race is a morally relevant category with no explanation. But we can then ask them *what they mean* by race, rather than allowing them to hide behind vague, undefined, and equivocal terms. If they answer "skin color," or "geographical origin," we can then ask them why *skin color* or *geographical origin* should have anything at all to do with moral principles. Although, at this point in history, skin color perhaps seems no more arbitrary a factor than "race" (since almost everyone considers race irrelevant to moral principles), at one point in time this was probably not the case. Thus, deconstructing race reveals the absurdity of using race as a moral criterion. We can similarly deconstruct the term "species" in animal rights debates. When philosophers argue that species is a morally relevant characteristic, we can ask what they mean by species. If they reply that a species is determined by how an individual looks, (the most honest answer, in my opinion), or the capacity to mate and have fertile offspring with certain other individuals, we can then ask them why appearance or an

ability to mate with certain individuals might have anything to do with moral principles.<sup>1</sup> Here, they are on much weaker ground than when they are allowed to simply call this "species." It is much more apparent to most people that appearance and mating capacities are irrelevant to morality than it is that "species," whatever that may be, is irrelevant to morality. The claim that species is morally significant seems to hold more water when we have not said what species is.

Regardless of any definitions that may be placed upon the term "species" by biologists, it is clear that for *most people*, distinctions of species are based solely upon difference of appearance. For example, I distinguish a chimpanzee from a gorilla by the fact that they look different to me. This conforms to Darwin's statement that begins this section to the effect that species determinations are based upon "resemblance." Furthermore, this resemblance is clearly not *mental* resemblance, but *physical* resemblance (just like race). In Franz Kafka's Metamorphosis, we say that the main character has *turned into an insect*, not that he has merely acquired the body of an insect while remaining a human because of his mind. This indicates the commonsense fact that the primary criteria we typically use for determining the species of an individual is the physical traits of the individual, not mental traits. Just because someone has the mind of a human does not make him human- what matters to determinations of species, at least in everyday conceptions, is our perceptions of physical qualities.

---

<sup>1</sup> While it may not be relevant to moral principles, Peter Carruthers believes that how an individual appears is in fact relevant to matters of practical application of moral principles. He argues that all humans, including "marginal humans," should be granted equal consideration because otherwise we are embarking on a slippery slope that may lead us to disregard the inherent rights of other humans. While it is not my aim to argue at length with points of this sort which do not regard moral principles, nonetheless I find this position to be practically unsound. For, if in fact "marginal humans" are not inherent bearers of moral worth, tremendous benefits could be gained from using these humans in medical testing. I believe that Carruthers underestimates these possible benefits. Needless to say, however, I do not think we should be performing medical tests on "marginal humans" because I believe they have inherent moral worth.

So, just as race is often said to be socially constructed because it is based upon our perceptions and interpretations of physical traits, species is also socially constructed in the sphere of common sense in part because it is based upon our perceptions and interpretations of physical traits. And, it is the nature of interpretations that they can differ from one individual to another or from one culture to another. Not surprisingly, our interpretations of species membership *do in fact* often differ both between cultures and between individuals within any given culture. For instance, within a Western cultural understanding, it is not *obvious* that baboons and macaques do not belong to the same species. And examining other cultures, Scott Atran writes in *Itzaj Maya Folkbiological Taxonomy*:

Generic species *often* correspond to scientific genera or species, at least for those organisms that humans most readily perceive, such as large vertebrates and flowering plants... A principled distinction between biological genus and species is not pertinent to local folk around the world (Atran, 125 in *Folkbiology*, my emphasis).

Species categories often, but not always, correspond across cultures. What differences we find important depend upon many factors, including the values of our society.

And our culture can influence biologists as well as laypeople, since biologists do not live in a social vacuum. Commonsense notions of species based upon appearance inevitably affect how biologists perceive species. Suppose, for instance, that biologists came to a consensus on a definition for species. Suppose they found some gene present in every individual, and certain differences in this gene appeared to perfectly correspond with preconceived notions of species distinctions. Now suppose that all of a sudden, biologists found that there was in fact one problem with this gene: It is exactly the same in humans and in mice. It is clear that biologists would reject what they had previously agreed to be the defining factor in species distinctions, sooner than they would accept that

humans and mice are in fact the same species. Thus, any possible definition that may arise for species distinctions will be partially based upon preconceived, probably unarticulated notions of what a species is. No matter what biological evidence is uncovered, biologists would never accept that humans and mice belong to the same species, nor will they ever accept a conceivable Hindu claim that humans and cows should be considered members of the same species. To give a more realistic example of societal values influencing biological categories: based strictly upon genetic similarity, humans should be considered apes, since we are genetically closer to chimpanzees than chimpanzees are to orangutans. It is only for historical and social reasons that biologists do not consider humans to be apes.

Our culture influences our perceptions of species differences in very important ways, and our perceptions of members of a given species are often misinformed because of our beliefs about the "nature" of that species. Many people assume, for instance, the pigs are "stupid" animals compared to dogs and cats, whereas some research indicates they may actually be significantly smarter than both. The qualities we attribute to the members of a perceived species depend in large part on the nature of our interactions with them. This is why most Americans assume that pigs are "stupid" and "dirty"- we do not usually interact with them on a personal level as we so often do with dogs and cats. For most of us, our perception of "pigs" is inextricably linked with the function that they serve for us. We see them as "farm animals" or "food," as if this were part of their essential nature. But of course this view of pigs is entirely contingent upon social forces.<sup>2</sup>

---

<sup>2</sup> When Cohen writes, "we think it reasonable to eat the flesh of cows but not the flesh of humans," I have to wonder whether he also thinks it reasonable to eat the flesh of dogs and cats. It is important to recognize the moral dichotomy we make between dogs and cats on the one hand, and cows and pigs, on the other, as a form of *speciesism* and not just as another type of prejudice. Speciesism in favor of one *non-human* species is rarely acknowledged as such. Doing so clarifies the position against Bernard Williams, who mistakenly equates speciesism with "humanism" (Waldau, 40).

Similarly, many people feel a moral imperative to protect birds such as parakeets and parrots, who are kept as pets, but feel little sympathy for the chickens and turkeys they eat. They are likely to justify this dichotomy with an appeal to some supposed important difference between the individuals of these species, though they will probably be unable to give an account of what this important difference is.

### **Species in the Context of the Animal Rights Debate**

As already stated, the fact that species is a social construction does not mean there are no differences between, say, humans and chimpanzees. Chimpanzees have a strong tendency to be more hairy, walk differently, look different, sound different, have different mental capacities, and live in different environments; plus they are unable to mate with humans, have different genotypic characteristics, and have a different set of recent ancestors. It is possible that any of these factors could be morally relevant. Which of them determines an individual's "species," as construed by biologists, everyday language, and moral philosophers? Biologists cannot agree. In everyday language, we generally determine an individual's species by their appearance and behavior, along some bits that we inherit from biologists, especially in making distinctions that are hard to call. As for moral philosophers, in their discussions of the role of species in moral considerations, they have, for the most part, not broached the question of which characteristic distinctions count in defining species.

Which characteristics *should* moral philosophers concentrate on in their understanding of species? If biologists use the characteristics that are relevant to their purposes, and laypeople use the characteristics that are relevant to *their* purposes, then

moral philosophers should use the characteristics that are relevant to moral philosophy in deciding what species concept they ought to adopt. Just as evolutionary biologists are interested in evolution, moral philosophers are interested in morality. So, in forming a species concept relevant to moral philosophy, the characteristics that we look at should be whatever characteristics are morally relevant. Currently, most of us use appearance as our major criteria in distinguishing between species. Yet, few people any longer believe that appearance is a morally relevant characteristic. While we may claim to use ‘reason’ or ‘language ability’ as our moral criteria, few would deny moral rights to humans who lack those capacities. It is therefore appearance and a false essentialist assumption that are the *real* basis of our moral distinctions when we deny animals moral rights. Moral philosophers, in forming a species concept relevant to their work, should shift the emphasis from physical to *mental* traits of individuals. The result of this I will call the “Moral Species Concept,” under which individuals are categorized according to their morally relevant properties.

Roughly, the qualities that I propose should be included in the Moral Species Concept are as follows:

1. The ability to feel physical pain and pleasure
2. The ability to feel emotional suffering and joy
3. The ability to experience boredom
4. The ability to have future goals

I have chosen these four for two reasons. First, I believe they have an ascending order of inclusion. Quality 4 includes quality 3, etc. This makes it so that there are exactly four species on the Moral Species Concept, simplifying classification. Second, I believe they are the four most important qualities in making moral decisions about how to treat an

individual. *Ceteris paribus*: If an individual can feel physical pain, she should not be physically harmed; if she can feel emotional suffering, she should not be prematurely removed from her loved ones; if she can feel boredom, she should not be confined; and if she has future goals, she should not have her life taken away. The four species of the Moral Species Concept allow us to classify individuals according to the types of moral respect they require.

Basing moral decisions upon the Moral Species Concept, rather than the species concepts that are intended for biologists and laypeople, would have tremendous implications for animal liberation. Rather than automatically giving preference to any trivial human interest over the most vital interests of other biological species, we would be forced to consider the mental and psychological capacities of each individual. No arbitrary barriers like appearance would enter the decision. As a result, all individuals would be given fair moral consideration of their interests.<sup>3</sup>

---

<sup>3</sup> The Moral Species Concept favors no particular moral theory, and can be used within a Utilitarian, Rights-based, or other moral framework depending upon how it is meted out.

## Bibliography

Atran, Scott, “The Universal Primacy of Generic Species in Folkbiological Taxonomy: Implications for Human Biological, Cultural, and Scientific Evolution” in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Atran, Scott, “Itzaj Maya Folkbiological Taxonomy: Cognitive Universals and Cultural Particulars” in Medin, Douglas L. and Atran, Scott, Folk Biology. The MIT Press; Cambridge, MA, 1999.

Carruthers, Peter, The Animals Issue. Cambridge University Press; Cambridge, 1992.

Cohen, Carl and Regan, Tom, The Animal Rights Debate. Rowman & Littlefield Publishers, Inc.; Lanham, 2001.

Darwin, Charles, On the Origin of Species. Harvard University Press; Cambridge, MA, 1964 (Originally Published 1859).

Dennett, Daniel, *Real Patterns* in Lycan, William G. Mind and Cognition: A Reader. Blackwell Publishers, 2<sup>nd</sup> ed.; Oxford, 1999.

Dupré, John, “On the Impossibility of a Monistic Account of Species” in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Ereschefsky, Marc, “Species and the Linnaean Hierarchy” in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Griffiths, Paul E., “Squaring the Circle: Natural Kinds with Historical Essences” in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Hacking, Ian, The Social Construction of What? Harvard University Press; Cambridge, MA, 1999.

Harris, Leonard, Racism. Humanity Books; Amherst, 1999.

Hull, David L., "On the Plurality of Species: Questioning the Party Line" in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Keil, Frank C. and Richardson, Daniel C., "Species, Stuff, and Patterns of Causation" in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Midgely, Mary, Animals and Why They Matter. The University of Georgia Press; Athens, 1984.

Mishler, Brent, "Getting Rid of Species?" in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.

Petrinovich, Lewis, Darwinian Dominion: Animal Welfare and Human Interests. The MIT Press; Cambridge, MA, 1999.

Pluhar, Evelyn, Beyond Prejudice. Duke University Press; Durham, 1995.

Rachels, James, Created from Animals. Oxford University Press; Oxford, 1990.

Regan, Tom, The Case for Animal Rights. University of California Press; Berkeley, 1983.

Rowlands, Mark, Animal Rights. Macmillan Press LTD; London, 1998.

Singer, Peter, Animal Liberation. HarperCollins Publishers, Inc.; New York, 2002.

Waldau, Paul, The Specter of Speciesism. Oxford University Press; Oxford, 2002.

Wilson, Robert A., "Realism, Essence, and Kind: Resuscitating Species Essentialism?" in Wilson, Robert A., Species: New Interdisciplinary Essays. The MIT Press; Cambridge, MA, 1999.