The human and the animal: Explanatory commensurability in Darwin's *The Descent of Man*

Teófilo Espada-Brignoni ·

Abstract

Many authors suggest using some of Michel Foucault's ideas as a theoretical approach to historical and sociological inquiry. In the present article, I analyze Charles Darwin's *The Descent of Man* through Foucault's notion of discourse. How the human subject is constituted as an object of knowledge is the question asked here. Both human and animals are discursive objects constructed through the identification of one with the other. Darwin argues that humans are subjected to the same natural laws as animals, while at the same time many human traits are found in animals. This relationship between humans and animals is showed in a variety of themes including taxonomy, mind, social traits, and morality.

Keywords:

Charles Darwin; Natural history; Evolutionary theory; 19th century; Michel Foucault

O humano e o animal: Comensurabilidade explanatória em *A Origem do Homem* de Darwin

Resumo

Diversos autores sugeriram utilizar algumas das ideias de Michel Foucault como abordagem teórica em pesquisas históricas e sociológicas. No presente artigo é analisada a obra *A Origem do Homem*, de Charles Darwin, com base na noção foucaultiana de discurso. A questão central é: como o sujeito humano é construído como objeto de discurso? Tanto o ser humano quanto animal é construído através da identificação de um com o outro. De acordo com Darwin, os humanos estão sujeitos às mesmas leis que os animais, sendo que ao mesmo tempo diversas características humanas se encontram também nos animais. Essa relação entre humanos e animais é demonstrada em diversos temas, tal como a taxonomia, a mente, as características sociais e a moralidade.

Palavras chave

Charles Darwin; História natural; Teoria da evolução; Século XIX; Michel Foucault

· Facultad Interdesciplinaria de Estudios Humanísticos y Sociales, Universidad del Sagrado Corazón, Puerto Rico. An earlier version of this article was presented at the Seventh British-North American Joint Meeting of the BSHS, CSHPS, and HSS, PA (USA), July 11-14. ✉ t_espada@yahoo.com.

Introduction

Ian Hacking, Ilana Löwy and Paul Veyne, among others, suggested using Michel Foucault's (1926-1984) so-called archeological ideas as a means to approach historical and sociological issues.[1] Inquiries on the construction of knowledge about certain objects might be approached through Foucault's notion of discourse, understood as groups of statements that constitute their objects.[2] Objects are produced, defined and brought to existence by statements. Statements vary in time as a function of epistemic ruptures that produce new ways of understanding.[3] When statements change, objects change with them, as in the case of humans and animals when evolutionary theory produced statements that challenged the pre-Darwinian natural history. Epistemic ruptures are simultaneously related to various fields of knowledge such as science, literature, and philosophy, among others.

An example of epistemic ruptures and the understandings they produce is provided by the comparison of two literary works. While Mary W. Shelley's (1797-1851) *Frankenstein* is convergent with the philosophical and biological ideas of the beginning of the 19th century, Joris-Karl Huysmans' (1848-1907) *À rebours* is closely related (historically and discursively) to evolutionary theory.[4] While Frankenstein's creature does not act as a monster because of his anatomical features or hereditary traits, Jean des Essientes' body and mental attributes are a product of atavistic reversions. Both works are embedded within different discursive formations, different rules for the construction of their objects and different statements.

Charles Darwin's (1809-1882) *The Descent of Man*, like Huysmans' *À rebours*, was written and published at a time when many readers accepted evolutionary theory. Among other works (by Darwin and other naturalists), *The Descent of Man* is part of an

[1] See for instance, Ian Hacking, *Historical Ontology* (Cambridge: Harvard University Press, 2004); Ilana Löwy, "Historiography of Biomedicine: 'Bio,' 'Medicine,' and in Between," *Isis* 102, no. 1 (2011): 116-22; Paul Veyne, "Foucault Revolutionizes History," in *Foucault and His Interlocutors,* ed. Arnold Davidson (Chicago: University of Chicago Press, 1997); and Paul Veyne, *Foucault: Pensamiento y Vida* (Barcelona: Paidós, 2009). In addition, John V. Pickstone in "Sketching Together the Modern Histories of Science, Technology and Medicine," *Isis* 102, no. 1 (2011): 123-33, suggests that Foucault's ideas and concepts might be used to understand the relationships between science, technology and medicine.

[2] Statements are defined by Foucault as a modality of signs that constitute the objects of discourse; see Michel Foucault, *The Archaeology of Knowledge and the Discourse on Language* (New York: Pantheon Books, 1972).

[3] See Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (New York: Vintage Books, 1973). According to Etienne Balibar, although the concept of 'epistemic rupture' was first used by Gaston Bachelard, authors like Louis Althusser, Georges Canguilhem and Michel Foucault re-interpreted Bachelard's ideas; see Etienne Babilard, "From Bachelard to Althusser: The Concept of 'Epistemological Break'," *Economy and Society* 7, no 3 (1978): 207-237.

[4] See Mary W. Shelley, *Frankenstein* (México, DF: Porrúa, 2005) and Joris-Karl Huysmans, *À rebours* (Hales Corner [WI]: Voasha, 2008). *Frankenstein* was originally published in 1818 and *À rebours* in 1884.

epistemic rupture produced within natural history that changed the ways humans and animals are understood within naturalistic knowledge. That book is particularly interesting, because it was first published in 1871, when, as Peter Dear remarks, "the dust had largely settled on Darwin's claim about the reality of evolution."[5] In addition, *The Descent* explicitly deals with human beings and their relationship to the rest of the animal world.[6] In the 19th century, natural history promoted a particular way of approaching human beings as objects of biological knowledge. Its statements brought into play concepts and theoretical choices in the discursive production of both humans and animals.[7] *The Descent of Man* is one of the works that allows understanding how humans were defined at a particular time in modern Western civilization. The present article explores the discursive relationship between humans and animals in 19th century evolutionary theory based on Darwin's *The Descent of Man*.

The question that I seek to answer here is: How is the human constituted in relation to the animal in Darwin's evolutionary discourse? Both human and animal are objects of naturalistic knowledge. However, before evolutionary theory, those objects were subjected to conflicting definitions wherein humans were not considered animals and animals did not possess human attributes. To account for the discursive relationship between humans and animals, the statements in Darwin's *The Descent of Man* that convey information about both were identified and analyzed. Such statements were organized thematically and hierarchically. Working thematically allowed accounting for the diversity of relevant topics relative to the construction of the objects of discourse, while the hierarchical organization allowed identifying the governing statements and their derivatives. According to Foucault, governing statements delineate the general characteristics of and relevant information about objects. The derivative statements, in turn, stem from governing statements, but their content is more specific. For example, governing statements might point to differences or similarities between humans and animals, while their derivatives allow understand the peculiarities of such relationships. This is particularly evident in Darwin's treatment of morality, namely, the only subject in which Darwin apparently posited an ontological gap between humans and animals. However, I will argue that even in the topic of morality, both humans and animals remain commensurable within Darwin's evolutionary discourse.

---

[5] Peter Dear, *The Intelligibility of Nature: How Science Makes Sense of the World* (Chicago: The University of Chicago Press, 2006), 113.

[6] By 1871, Dear argues, it was assumed that evolution also applied to human beings; Ibid.

[7] Both 'concept' and 'theoretical choices' are understood based on Foucault's conceptualization of the discursive formation that governs the way statements are constructed; see Foucault, *Archaeology of Knowledge*.

Discourse and natural history

One of the features of the rupture that occurred within natural history in the second half of the 19th century was the way it organized what could be said about humans and animals. Throughout Western history, both objects were ontologically alienated by the philosophical and naturalistic discourse.[8] Evolutionary theory established a broad diversity of bonds between those objects. The existence of those relationships further suggests that one of the features of 'discourses' is the explanatory commensurability of certain objects. Humans and animals were not commensurable during the Middle Ages. Such ontological division meant that the set of explanations and attributions that applied to one could not be used to explain the other.

As it was mentioned above, Foucault argued that discourses are characterized by the way they construct a set of objects through groups of statements.[9] It might be added that objects can have similar or different ontological status within a given particular discourse. When the statements that define an object have the same or similar construction as the ones that define another, I consider that they are commensurable. Since discourses deal with knowledge, commensurability demands that the rules used to explain both objects be the same. The different objects of a particular discourse might be described through dissimilar attributes. However, if they are part of a same discourse, their discursive construction will be the same. A discursive construction is the same when the objects in question are subjected to the same use as the other discursive units (enunciation, concepts and theoretical choices).

Statements are composed of four units: objects, enunciation, concepts and theoretical choices. According to Foucault, depending on the research question some units are privileged over others. While the focus of the present article is on how 19th century naturalism constructed its objects, also concepts and theoretical choices are considered in the analysis. Both notions allow evaluating the possible commensurability of objects within discourse. While concepts deal with the characterization of objects, theoretical choices prescribe the general (or specific) ways in which an object is to be considered, explained, or classified using concepts.[10] For example, concepts such as 'rudiment' and 'atavistic reversion' were used to describe certain properties of humans and animals. Then, both concepts are related to the possibilities of naturalistic observation and the ideas on the descent of species from common ancestors.

---

[8] For a detailed discussion of the ontological features of humans and animals before evolutionary theory, see Jean-Marie Schaeffer, *El fin de la excepción humana* (Buenos Aires: Fondo de Cultura Económica, 2009).

[9] "We shall call discourse a group of statements in so far as they belong to the same discursive formation," Foucault, *Archaeology of Knowledge*, 117.

[10] Ibid., 71-5.

I suggest that humans and animals are constructed in *The Descent of Man* along horizontal and vertical explanatory planes.[11] Humans and animals being subjected to the same discourse are bound to the same set of concepts and theoretical choices. However, the ideas regarding the descent of species from previous forms simultaneously place humans and animals on a vertical plane according to their complexity. Such discursive construction produces an explanatory commensurability that was not featured in previous naturalistic discourses.[12] I consider that 'explanatory commensurability' is an emergent function of discourse. This notion allows for the analysis of how sets of objects are treated within a particular discourse. For objects to be commensurable in explanatory terms, they must be subjected to the use of the same concepts and theoretical choices, especially when a statement suggests that they are different in some regard.

Although Darwin was perhaps one of the most widely recognized naturalists of the 19th century, it must be admitted that even before his *Origin of the Species* (1859) ideas on the descent of species had been already formulated. The Linnaean taxonomy assumed that species were fixed entities, whereas a variety of 19th century thinkers argued that species could descend from more primitive forms.[13] Through the use of definite concepts and theoretical choices, the 19th century evolutionary worldview provided a new set of relations for the objects of naturalistic discourse.

Through a careful analysis of Darwin's *The Descent of Man*, I was able to locate seven governing statements. Several derivative statements additionally show how certain concepts and theoretical choices were employed in the process of making sense of human beings within an evolutionary framework. The themes addressed by the governing statements include taxonomy, descent with modification, mental and physiological structure, development, social traits, beauty and morality. Through such themes, the human object is animalized, while the animal is humanized, thus putting into question the ontological separation between them that characterized previous naturalistic discourses.

---

[11] The use of concepts regarding lines and planes can be found in Gilles Deleuze, *Derrames: Entre el capitalismo y la esquizofrenia* (Buenos Aires: Cactus, 2005).

[12] For the purpose of the present article, previous discourses are the ones corresponding to the Middle Ages and the modern period from the Renaissance to the first half of the 19th century. Ancient culture established some relationships between humans, animals and a diversity of beings, although naturally different from modern evolutionary theory, see Schaeffer, *El fin de la excepción humana* (Buenos Aires: Fondo de Cultura Económica, 2009), on 23.

[13] See Paul Ellion, "Erasmus Darwin, Herbert Spencer, and the Origins of the Evolutionary Worldview in British Provincial Scientific Culture, 1770-1850," *Isis* 94, no. 1 (2003): 1-29.

Taxonomy

According to Marc Ereshefsky, Darwin doubted the reality of the Linnaean categories.[14] Yet, *The Descent of Man* calls for the inclusion of the human being within the same taxonomic category as animals. Darwin writes, "many of our best naturalists have recurred to the view first propounded by Linneaus, so remarkable for his sagacity, and have placed man in the same Order with the Quadrumana, under the title of the Primates"[15]. While Carl Linnaeus (1707-1778) included humans and animals in his taxonomy, as Darwin observed, its implications in the Darwinian discourse corresponded to a different comprehension of the living beings. Linnaeus' work was founded on an imperative of classification of the natural world embedded within a creationist framework, while evolutionary thought focused on the organic and temporal connectedness of such objects. As Peter Dear remarked regarding the *Origin of the Species*, "Taxonomists demonstrated lines of filiation between species; Darwin would simply explain what these connections meant in a new, and, he hoped, more convincing way"[16].

The taxonomy statement has close relationships to the rest of the governing statements in Darwin's natural history. His description and explanation of traits considered to be either exclusively animal or exclusively human took into account the taxonomic position of humans as one among the creatures in the reinterpreted Linnaean classificatory outline.[17] Such descriptions and explanations imply a horizontal commensurability between humans and animals as objects of discourse. Contrary to the preceding philosophical and naturalistic ideas, in which humans and animals were ontologically separated,[18] Darwin promoted a naturalistic classification that proceeded through the observation and analysis of small resemblances among humans and animals, rather then through alleged enormous differences.[19]

This statement, which is the most general, suggests the rules for naturalistic classification. Darwin writes, "If man had not been his own classifier, he would never have thought of founding a separate order for his own reception"[20]. Naturalistic observation is simultaneously (horizontal plane) applied in evolutionary theory to all

[14] Marc Ereshefsky, "Some Problems with the Linnaean Hierarchy," *Philosophy of Science* 61, no. 2 (June 1994): 186-205, on 199.
[15] Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (New York: Appleton & Company, 1875), on 149.
[16] Dear, 96.
[17] See for example the statement discussed in section "Mind and Physiology".
[18] Schaeffer, *Fin de la excepción humana*.
[19] Darwin, 153.
[20] Ibid., 150.

the animals including humans. Derivative statements from the taxonomic themes suggest the possibility of comparing the birth rates of humans and animals.[21] A similar comparison is evident in the fact that categories 'civilized' and 'wild' are applied both to human and animal populations. According to Darwin "We might, therefore, expect that civilised [sic] men, who in one sense are highly domesticated, would be more prolific than wild [sic] men"[22].

A feature of the Darwinian discourse is the explanatory commensurability that reorganized natural history during the second half of the 19th century. In the present article, I argue that such features do not stem from a deterministic ontology. Rather, Darwin's work proposes a kind of 'ontological fairness' according to which it is imperative to understand the living beings in their respective place in the evolutionary scale.

Descent

Along with the imperative inclusion of human beings within the same taxonomic category as animals, Darwin asserts, "Man is descended from some lower form, notwithstanding that connecting-links have not hitherto been discovered"[23]. This second governing statement is related to ways of explanation, observation and the possibility of sketching such 'connecting-links.' While the taxonomy statement outlines horizontal relationships between humans and animals, the descent statement ties the objects of taxonomy on a vertical plane. In addition, it drew tentative sketches of the descendants of species from previous forms. This vertical dimension is intimately related to the previous governing statement, since homological features within a same class are understood through their common ancestry.[24]

The establishment of a vertical dimension entails a series of concepts such as rudiments and reversions. The use of such concepts allows for the observation and explanation of certain traits. Such features allow the naturalist to account, at least partially, for the 'bloodline' of an organism. This is performed through the identification of homologies that are interpreted in gradual terms rather than as dichotomous

[21] Ibid., 215: "it is a well-ascertained fact that with man the number of males dying before or during birth, and during the first few years of infancy, is considerably larger than that of females. So it almost certainly is with male labs, and probably with some other animals".
[22] Ibid., 45.
[23] Ibid., 146.
[24] Ibid., 24: "The homological construction of the whole frame in the members of the same class is intelligible, if we admit their descent from a common progenitor".

absence/presence. Darwin uses concepts such as 'rudimentary traits' and reversions to demonstrate the vestiges of the animal dimension of human beings.

All the objects of evolutionary discourse are more or less unified by chronological relationships of ancestry. This temporal bond among organisms allows for a partial reconstruction of the progenitor of a species. By comparing the alleged lowest member of one species to the highest member of the preceding one, Darwin claims that it will be possible to "partially restore the structure of our early progenitors"[25]. In this way, the 'descent' statement unified its objects within a timeline, which afforded the possibility of sketching the ancestors of a species through the same concepts and theoretical choices used to consider the living beings in the present time. This vertical dimension was additionally related to the 'ontological fairness' described above.[26]

Mind and physiology

In *The Descent of Man*, Darwin wrote about the mental powers of both animals and humans in the same way he described their physiological traits. That is to say, discursively body and mind are more or less subjected to the same kind of evolutionary explanation. In addition, Darwinian evolutionary theory claims that humans and animals are commensurable in mind and body, while the mind is not reduced to a mere function of the brain. Darwin's understanding of mind and body has two ontological implications that I discuss next.

First, according to Darwin, humans and animals have the same nature as concerns the fundamental constitution of their mental and physiological characteristics. Humans follow the model of mammals, which can be shown by means of structural equivalence, since the bones of a human "can be compared with corresponding bones in a monkey, bat, or seal"[27]. In *The Descent of Man*, some of the physiological characteristics of those animals are depicted as equivalents. The way monkeys, bats and seals are depicted in the preceding quote suggests that Darwin's evolutionary theory promotes new ways of looking at living beings. The use of this kind of observation as a method implies that all living beings are related one to the other, even when they look very different.

Similarly, according to Darwin, there is not a fundamental qualitative distinction between the mental abilities of humans and animals. Dogs are mentioned in *The Descent*

[25] Ibid., 160.
[26] This argument is also shown in Darwin's cautionary remark against overstating the importance of the brain in the human species; Ibid., 149.
[27] Ibid., 6.

of Man as an example of an animal species able to use abstract concepts (they can distinguish between unknown dogs and friends) and as having some understanding of the human language. Darwin even suggested the possibility that animals have some degree of imagination: "As dogs, cats, horses, and probably all the higher animals, even birds have vivid dreams, and this is shewn [sic] by their movements and the sounds uttered, we must admit that they possess some power of imagination"[28]. The differences between the animals mentioned are of degree, rather than implying disparity in their respective natures, and the reader is called to 'admit' what more traditional naturalists denied.

Second, the statement about the similarities between humans and animals in mind and physiology suggests the presence of variability in both the mental and the physiological features. Characteristics are variable. There is not any abstract/imperative determination compelling a member of a species to express a given trait in a definite manner. In other words, sometimes a variation is just a variation. This feature of evolutionary discourse implies an ontology of variability; while some traits are understood as a kind of evolutionary pathology, others are mere variations that are meaningless by themselves, neither beneficial nor harmless. The explanation of such variations must follow one and the same path, no matter whether the object explained is a human or an animal. Theoretical choices regarding naturalistic observation and explanation are intertwined by such ontological attitude.[29]

Through diverse derivative statements, the organic and mental commensurability of human and animals accounts for the reaction of monkeys to alcoholic beverages (such as brandy), the organic communicability between species and the use of elementary tools by some primates. Regarding the transmission of diseases, animals are not the cause of human sickness, but both are subjected to the same parasites, the genesis of certain diseases and to similar healing processes.[30] Similarly, as concerns the mental processes, the use of leaves by orangutans that cover themselves at night and the straw-mats used by baboons to shade themselves from the sun are portrayed as the first steps toward the production of clothes and housing.[31] Even ideas regarding gender differences (in body and mind) are discursively justified through comparisons between and within species.

---

[28] Ibid., 74-5.

[29] Such as natural selection, use and disuse of parts, among others. For the notion of ontological attitude, see Andrew Pickering, *The Cybernetic Brain: Sketches of Another Future* (Chicago: University of Chicago Press, 2010).

[30] Darwin, 6-7: "Man is liable to receive from the lower animals, and to communicate to them, certain diseases".

[31] Ibid., 82-3.

Development

Another main theme that emerges from Darwin's *The Descent of Man* is the use of developmental notions to explain the growth of the members of a species and the fact that the pattern of growth of one species is similar to the closest organism in the evolutionary scale. This argument is related to the previous statement, since in addition to the homological construction of organisms within a class, it also asserts that many creatures are subjected to, more or less, the same developmental stages.[32] Such development supposes a demarcation among chronologically differentiated stages. In Darwin's view, this assertion is demonstrated through an analogy: some monkeys differ from their infants in the same degree as human adults from infants.[33]

The idea that humans and animals develop in a similar manner takes both the commensurability of organisms in general and their position on a vertical scale into account. The stages observed in humans are more similar to the stages of apes than the ones of dogs. Darwin quotes the naturalist Tomas Henry Huxley (1825-1895) who wrote "The early stages of man, are identical with those of the animals immediately below him in the scale"[34]. While Darwin argues that there is more affinity between humans and primates, he also asserts that the embryo of a dog provides an example of the similarity between the developmental stages of humans and animals, as well as of the relationship of humans to other mammals. Darwin reproduces drawings of a human and a dog's embryo to show their similarities.[35] This claim reflects once again the use of a vertical scale to which humans and animals can be assigned.

Darwin criticizes the idea that only humans are capable of "progressive improvement"[36]. Development, in this sense, is not simply the transition from one stage to another, but also the ability for learning. While human learning can be mediated through human communication, animals learn to proceed more cautiously after witnessing other members of their species be poisoned or caught in traps. Darwin's statement about development in humans and animals closes the gap between species. They are commensurable in their physical growth and both can develop their mind. The difference between the objects of Darwin's naturalistic discourse, once again, is one of degree rather than of nature.

---

[32] Ibid., 24-5.
[33] Ibid., 8.
[34] Thomas H, Huxley, *Evidence as to Man's Place in Nature* (London: William and Norgate, 1863), on 65, quoted in Darwin, 11.
[35] Darwin, 9-10.
[36] Ibid., 79.

While animals are able to grow cognitively, through derivative statements Darwin suggests a certain kind of evolutionary pathology for humans categorized as 'idiots'. According to Darwin, subjects with "arrested development" have traits that "continue to grow whilst still retaining their early condition"[37]. Those humans "resemble the lower types of mankind"[38] and "have no sense of decency"[39]. This implies a linear view of individual development, albeit within an evolutionary framework. The 'arrest' of normal development brings some humans closer to animals and a degrading classificatory status is assigned to such humans.

Social traits

The objects that emerge from *The Descent of Man* are constructed mentally and physiologically in a similar manner, share physiological and mental attributes and go through similar stages of development. In addition, some of them organize themselves socially. Darwin loosely delineates the possibilities for social behavior in animals and humans, while providing a tentative description of the social traits in the ancestors of human beings. Through the assumption of a vertical scale, Darwin's naturalistic discourse argues that the ape-like progenitors of humankind were probably social beings. Such inference resulted from simultaneous observation of alleged lowest humans and their closest relatives in the evolutionary scale.[40]

Some 'requirements' make it possible for some organisms to behave socially. Social behaviors emerge in relatively weak animals that posses certain mental qualities like sympathy, special social instincts and some degree of intelligence. While not all the animal species are social, some are potentially social provided they somehow meet such requirements. One of these requirements is the acquisition of "instinctive feelings, which impel other animals to live in a body"[41]. In this sense, the gorilla is not the best option to sketch the connecting links between humans and animals, because they are strong enough to live without a high degree of intelligence or complex social organization. According to Darwin, a gorilla that "could defend itself from all enemies, would not

[37] Ibid., 35.
[38] Ibid., 36.
[39] Ibid., 36.
[40] Ibid., 62: According to Darwin "Judging from the habits of savages and of the greater number of the Quadrumana, primeval men, and even their ape-like progenitors, probably lived in society".
[41] Ibid., 129.

perhaps have become social"[42]. In this view, gorillas would not be viable candidates for sketching the ancestors of humans.[43]

Social instincts are a part of a group of concepts that discursively construct some animals as social. Yet, as with previous statements, the social traits differ in degree from one species to another. Animals with social instincts, but occupying a lower level in the vertical scale of organisms, are related to each other through specialized social instincts. Humans, which are higher in that scale, do not have special drives that impel them to behave in definite manners. That which characterizes the human social actions is the combination of non-specialized social drives and the mental capacity.[44] Both qualities are animal in nature, the difference being that in the human object the social instincts are present in a less imperative way and are accompanied by the use of reason.

Darwin proposed and naturalized loyalty, obedience and empathy as traits that social animals acquired through evolution. He writes, "As man is a social animal, it is almost certain that he would inherit a tendency to be faithful to his comrades, and obedient to the leader of his tribe; for these qualities are common to most social animals"[45]. In addition, the social instincts might be directed to individuals from other species, since "we find even distinct species living together"[46] and dogs and humans are able to love each other.[47]

Beauty

Another governing statement in *The Descent of Man* argues in favor of a horizontal commensurability of the sense of beauty between humans and animals. Darwin writes, "When, however, it is said that the lower animals have a sense of beauty, it must not be supposed that such sense is comparable with that of a cultivated man"[48]. In addition, "we must not judge of the tastes of distinct species by a uniform standard; nor must we judge by the standard of man's taste"[49]. Observation and the possibility to analyze naturalistic data once again imply theoretical choices, which in the Darwinian view of evolution are used to evaluate the objects of naturalistic discourse (such as

[42] Ibid., 64.
[43] Ibid.: "Hence it might have been an immense advantage to man to have sprung from some comparatively weak creature".
[44] Ibid., 109.
[45] Ibid., 70: Darwin also comments on the case of a baboon that "not only adopted young monkeys of other species, but stole young dogs and cats, which she continually carried around".
[46] Ibid., 100.
[47] Ibid.
[48] Ibid., 211.
[49] Ibid., 380.

humans and animals) with a fair scale. While naturalistic knowledge still exhibited the typical 19th century biases toward gender, race and class differences (since not everyone was considered a cultivated man), Darwin suggested that observations and interpretations ought to be adequately performed through the understanding of the evolutionary vertical plane. This in turn implies the possibility of taking the 'lowest' member of a species to compare its sense of beauty to the one of another species. While 'cultivated' male humans are placed at the top of the scale of the living beings' capacity for beauty, they still exhibit an uncanny similarity with the sense of beauty of birds.[50] This is suggested by the observation of how both humans and birds wear feathers on their heads.[51]

One of the topics derived from this notion of naturalistic aesthetics is a relativistic conception of the sense of beauty. Both humans and animals are capricious in their tastes. Concepts regarding beauty are explained through to 'sexual selection' as a theoretical choice for the explanation of features like ornaments and the capacity of singing of various animals. In Darwin's framework, the notion of sexual selection is used in part to argue that there is some sort of agency behind the actions of animals.[52] In addition, he suggests that beauty is a matter of habit, both in humans and animals.[53]

Through the sense of beauty, both humans and animals are placed simultaneously on the horizontal and vertical planes of the Darwinian naturalistic discourse. Darwin's statement on beauty advances the idea that both humans and animals have a sense of volition and capricious tastes. Beauty is articulated in terms of degree through an ontological fairness that takes the observation of small resemblances as evidences of the connections between humans and animals. Humans are just one among those beings "capricious in their affections, aversions, and sense of beauty"[54].

Morality

According to Kenneth Gergen, Darwin was one of the authors that questioned and debunked the idea that morality could be subjected to scientific study.[55] Yet in *The*

[50] Ibid., 359; 400.
[51] Ibid., 359.
[52] Ibid., 605: "The views here advanced, on the part which sexual selection has played in the history of man, want scientific precision. He who does not admit this agency in the case of the lower animals, will disregard all that I have written in the later chapters on man".
[53] Ibid., 495.
[54] Ibid., 93.
[55] Gergen, among other scholars who approached modernity, argued that in the 19th century the scientific discourse deemed emotions and morality as unfit objects for scientific studies, see: Kenneth J. Gergen, "Social Construction and Moral Action," in *Social Construction and Moral Discourse*, ed. Daniel N. Robinson

Descent of Man Darwin includes morality within the framework of evolutionary natural history. The 19th century physician and alienist William Lauder Lindsay (1829-1880) also treated morality within the framework of evolutionary theory and criticized the use of the word 'animal' as synonym of immorality.[56] In turn, Herbert Spencer (1820-1903) thought that morality was an important feature of evolution. According to Spencer, morality stemmed from the 'survival of the fittest' and argued "moral development was born from this competition"[57].

Darwin's governing statement about morality is the only one where he argues that there is a fundamental and qualitative difference between humans and animals; or so it would seem. Darwin explicitly agreed with authors like James Mackintosh (1765-1832) and Immanuel Kant (1724-1804), who claimed there was a fundamental difference between human and animal in the terms of their sense of morality.[58] However, such 'agreement' is superficial, since Darwin's statement about morality is constructed with the same features that characterize the other statements discussed above. Discursively, the same planes and ontological features present in the previous governing statements also characterize Darwin's understanding of morality.[59] A superficial account of this statement would seem to contradict the idea that naturalistic discourse produces explanatory commensurability between humans and animals. Yet, the construction of the statement shows that they are, indeed, commensurable.

According to Darwin, morality is the only quality that humans have and animals have not; therefore, only humans are moral in *The Descent of Man*.[60] However, the foundations of the human moral sense are animal in nature.[61] Darwin suggests that morality emerges from a particular combination of the social instincts and mental faculties. In his view, the social instincts in humans are not accompanied by concrete and specific sets of actions guiding certain behaviors, but by 'advanced' mental qualities. One of the topics that derive from this statement is that contrary to the rest of the animals, humans can compare past and future actions with their intellect.[62] Darwin

(San Diego: Academic Press) 9-27. As it was shown in sections "Social traits" and "Morality" of this article, some natural historians did study those topics, Darwin among them.

[56] See W. Lauder Lindsay, *Mind in the Lower Animals: In Health and Disease* (London: C. Kegan Paul & Co., 1879), vol. 1, on 12.

[57] See Paul Elliot, "Erasmus Darwin, Herbert Spencer, and the Origins of the Evolutionary Worldview," *Isis* 94, no. 1 (2003): 1-29, on 24.

[58] Darwin, 97.

[59] The statements regarding qualities and processes of body, mind, social instincts and sense of beauty illustrate the inclusion of humans and animals in one and the same naturalistic discourse, differing in degree rather than in nature.

[60] Darwin, 610.

[61] Ibid.

[62] Ibid., 111.

points out that animals deliberate between actions in the present time (whether to save another animal or not) but cannot compare actions in the past or the future. Such temporal capacity implies the possibility of approving or disapproving actions and motives related to the past and the future.

Additionally, another derivative statement regarding morality concerns the possibility of other animals acquiring the sense of morality. Morality emerges from a particular combination of qualities present in animals, the only difference being that they are not developed in the same manner as in humans. Animals with social instinct might develop a moral sense were their mental traits to advance further. Darwin writes:

> "The following proposition seems to me in a high degree probable– namely, that any animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well, or nearly as well developed, as in man."[63]

As an example, Darwin mentions the possibility of a pointer dog to question a past behavior, like failing to resist the temptation to hunt for itself a prey it was only supposed to point at: "A pointer dog, if able to reflect on his past conduct, would say to himself, I ought (as indeed we say of him) to have pointed at that hare and not have yielded to the passing temptation of hunting it"[64].

Discursively, Darwin dealt with morality in the same way he treated other topics in *The Descent of Man*. Human morality comes from animal faculties. The hypothetical construction of a more evolved dog even suggests its possible reasoning and behavior regarding a particular task.

Conclusion

The governing statements in Darwin's naturalistic discourse organize their objects within a complex web of relationships. The human, the animal and their connecting links are mutually constituted on a horizontal plane that entails the use of similar concepts and theoretical choices. Observation, description and explanation are produced through an explanatory commensurability that attributes more weight to

[63] Ibid., 98.
[64] Ibid., 611.

small resemblances than to apparent disparities. This horizontal dimension runs through all statements as concerns the relationship between humans and animals, being that also the one single exception, morality, follows the same rules as the other statements.

In addition to the horizontal plane, the human, the animal and their progenitors are placed on vertical planes both within and between species. Such verticality is accompanied by an ontological fairness that demands that any comparison between species take their respective place in the scale of organisms into account. The vertical dimension allowed Darwin to draw a preliminary sketch of the progenitors of human beings. Such progenitors were produced by means of the same rules and features used to explain evolutionary theory. Even the construction of a hypothetical moral pointer dog was sketched through such verticality.

Both the vertical and the horizontal planes mutually constitute and organize the objects of naturalistic discourse in Darwin's *Descent of Man*. Rudiments and reversions allow for detection of traits in the human being that evidence his animality. At the same time, concepts relative to mental properties and capacities thought to exist exclusively in human beings are shown to have an animal origin. This fact qualifies the animals as being driven by some degree of reason and a taste for beauty, thus putting into question the pre-evolutionary natural history. Darwin's natural history unfolds through a simultaneous animalization of human beings and humanization of animals, making both objects explanatorily commensurable. Such commensurability might be considered as a main feature of 19th century natural history and should be more thoroughly explored through the analysis of other contemporary advocates of evolutionary theory.

Acknowledgments

I would like to express my gratitude to Nydza Correa, Frances Ruiz, and *Circumscribere's* reviewers for their comments and corrections during the elaboration and revisions of this article.