

The Language Gap: A Consideration of How Humans Differ from Other Animals

Jonathan Murray

In his *Discourse on Method*, René Descartes explains what he perceives to be the differences between humans and other animals. The main difference, he explains, is that animals “could never use words or other signs, or put them together as we do in order to declare our thoughts to others” (Descartes 32). His statement of this difference was one of the first non-religious attempts at explaining the seemingly vast dissimilarity between humans and their counterparts in the animal kingdom. In the nineteenth century, Charles Darwin’s *The Descent of Man, and Selection in Relation to Sex* sparked new scientific interest in the similarities between humans and animals. Darwin, many believe, stresses in this work “nonprogressivism,” the belief that natural selection represents a “general advance as a predictable consequence of any mechanism of change” (Gould 137). In fact, Darwin “never liked evolution” as a term, using it only because of its “general currency” (Gould 137). Many ethicists agree with this relativist assessment of natural selection, citing Darwinism as the reason for “the abandonment of the idea of human dignity and the substitution of a different sort of ethic” (Rachels 171). Additionally, human genome research has revealed that “we are just 1 or 2% different from chimpanzees genetically” (Marks 4). Similarly, Darwin observes that “there is no fundamental difference” between humans and apes not only in their physical construction but in their “mental faculties” as well (Darwin 70). This knowledge has led some to argue that apes are entitled to “the rights of humans” (Marks 186). Chimpanzees have, in any case, become the benchmark by which humans measure their similarity to all other animals.

While I acknowledge the many similarities between humans and apes, especially their genetic resemblance, no study has disproved the language difference first noted by Descartes. While Charles Darwin helped to clarify the language difference by observation, twentieth century scientists, like Roger Fouts, have made many dubious claims on the subject and have added to the field their own studies, some of which present questionable results and subsequently unreliable conclusions.

Among Charles Darwin’s works, *The Descent of Man* most directly assaults traditional views of humans’ superiority over other species. Darwin’s empirical observations confirm not only “that man is constructed on the same general type or model as other mammals” but also that “the reproduction of the species, is strikingly the same in all mammals, from the first act of courtship by the male, to the birth and nurturing of the young” (Darwin 10, 12). These similarities, accompanied by many others, are both physiological and behavioral, leading Darwin to believe that humans and animals share a “community of descent” and, therefore, “retain certain rudiments in common” (Darwin 29). This view rejects both the idea that animals and humans were each produced by “a separate act of creation” and the theological belief that “at some point God had interrupted the course of human history to implant man’s soul in him” (Darwin 29, Rachels 57). Darwin summarizes his view by claiming that “it would be beyond my limits [. . .] to name the innumerable points of structure in which man agrees with other Primates” (Darwin 155).

However, Darwin, while emphasizing the similarities between humans and animals, claims that the “habitual use” of language is “peculiar to man,” though he has noticed that both man and ape use “inarticulate cries” along with “gestures and the movement of the muscles of the face” to communicate “the more simple and vivid feelings” (Darwin 89). In addition, animals, such as dogs, can “understand many words and sentences,” and parrots and other birds have exhibited their talent for the “articulation” of words (Darwin 89, 90). Parrots have also shown that they can “connect unerringly words with things, and persons with events” (Darwin 90). In short, animals have displayed both a limited understanding of language and “speech,” which differs from language in that it is only a “mindless act of sound reproduction” (Marks 182). Despite the existence of such powers among animals, Darwin holds that humans and animals differ “solely in his [man’s] almost infinitely larger power of associating together the most diversified sounds and ideas” (Darwin 90). He deduces that the device producing this language difference must pertain to the “high development” of humankind’s “mental powers” (Darwin 90).

Darwin’s observations provoked enough interest in the field of animal language that many twentieth-century scientists decided to study it. Experiments in the field have involved several different species of ape, but the ones most pertinent here are those that involve chimpanzees, humans’ closest genetic relatives. All the experiments done in this field have used non-spoken language, as primate physiology precludes any possibility of verbal communication. However, speech, that “mindless act of sound production,” is irrelevant here, for the means of communication is unimportant (Marks 182). One could argue that all of these studies have only attempted to verify whether language, as a system of communication with rules of construction and standardized terms, can exist among animals. The researchers who have performed these experiments have often announced seemingly groundbreaking discoveries based on scientific results that seem uncertain at best.

One researcher who has made such claims is Roger Fouts, author of *Next of Kin: What Chimpanzees Have Taught Me about Who We Are*; as I will demonstrate, he makes not only several questionable arguments but also one that is obviously fallacious. Fouts claims that years of working with a chimpanzee taught him that not only can animals “think and feel” but they can also “communicate those thoughts and feelings through language” (Fouts 5). Furthermore, he rejects Noam Chomsky’s theory that natural selection has produced, in the “six-million-year period since humans diverged from our fellow apes,” a “language organ” in the brain (Fouts 94). “There simply wasn’t enough time [. . .] to add on a new brain structure,” he declares (Fouts 94). Most incredibly, Fouts claims that humans and chimpanzees “undoubtedly adapted the single system of communication it inherited from a common ancestor to suit its specialized needs [. . .] But these modes of communication must be grounded in the same ancestral cognition,” he continues, “or Darwin’s theory of evolution is wrong” (Fouts 95).

Not surprisingly, an analysis of Fouts’s impressive statements reveals several problems with his reasoning. First, his claim that a “language organ” unique to humans cannot exist depends upon the impossibility of six million years’ evolution producing such a change; however, earlier in his work he notes that chimpanzees’ inability to speak derives from their “relatively thin tongue[s] and higher larynx[es]” (Fouts 26). These speech mechanisms, like Chomsky’s “language organ,” represent radical physiological

changes. According to Fouts, major differences in speech mechanisms could have evolved in six million years while the “language organ,” perhaps just an area of the brain regulated by a few genes, could not have. This assertion seems questionable at best.

Second, Fouts cites studies claiming that “seventy-five percent of the meaning in a face-to-face conversation is communicated through body language and intonation,” thereby determining that Chomsky’s research on language is invalid because he largely studied “words on the page,” removing language “from its natural social context” (Fouts 96). Unlike Fouts, Descartes insists that language consists “of arranging various words together and of composing from them a discourse by means of which they [those using language] might make their thoughts understood” (Descartes 32). While Fouts never defines the term language, he seems to feel that it consists of those “inarticulate cries [. . .] aided by gestures and the movements of the muscles of the face” mentioned by Darwin (Darwin 89). Such “language” cannot communicate any but “the more simple and vivid feelings” (Darwin 89). Because even lower mammals can communicate in this way, Fouts’s definition would require that, for example, dogs could communicate by using language. Clearly, this suggestion is absurd, as is his definition.

Lastly, Fouts’s objection to Chomsky’s position includes a notable logical fallacy: the genetic fallacy, which is committed when one blatantly assesses any statement not by its content but, rather, by its source. (Here the term genetic is used as it pertains to the origins of a belief.) Fouts asserts that Chomsky’s “failure” is “understandable” because he and “his followers were not biologists,” implying that if Chomsky had not been “working in the philosophical tradition of Descartes,” his claim might have been correct (Fouts 95).

Unfortunately, this instance of the genetic fallacy distracts the reader from the weak scientific evidence noted in *Next of Kin*. Neither Fouts’s studies on chimpanzees nor those documented in *Language Learning by a Chimpanzee: the LANA Project* produce sufficient data to prove that chimpanzees can engage in intelligent discourse or conversation. Fouts’s evidence, in particular, lacks credibility, as he manipulates it to support certain conclusions. For example, one of his chimpanzees, named Lucy, “defecated” while he “was not looking” (Fouts 156). The chimpanzee signs, “dirty dirty;” upon being asked (via sign language) who is dirty, Lucy points to a graduate student and then to Fouts (Fouts 156). Finally, the chimpanzee signs that she is dirty and apologizes, “Sorry Lucy” (Fouts 156). Fouts anthropomorphizes Lucy by inserting in text varying punctuation for her signed phrases. Because she and Fouts communicate using sign language, Lucy could not possibly have used this punctuation. Fouts would contend that her facial expressions provided the impetus for his insertion of question marks and exclamation points, but these characters, subjectively added by Fouts, only distort the data. The entire exchange, Fouts claims, reveals that chimpanzees are capable of deceit, a trait “long believed to distinguish humans from nonhumans” (Fouts 155). He bases this conclusion on a deep interpretation of the “conversation” while failing to note that one could just as easily have determined that Lucy had little idea of what was happening. Fouts’s construal of Lucy’s signs might reflect confirmation bias, the tendency to place unfair weight on that evidence which supports one’s own beliefs. This tendency does not reflect sound use of the scientific method.

The *LANA Project* studies, like Fouts’s, are based on generous interpretations of vague statements. “Conversations with Lana,” an abstract of an experiment conducted by

Timothy Gill, reveals a higher level of objectivity than Fouts's work because among other differences, it does not involve sign language and facial expressions. Researchers trained Lana, a chimpanzee, to "speak" using keys, each printed with a unique combination of shape and color and matched to a certain word; Lana learned to understand the language by seeing shapes resembling the buttons' projected onto a screen. Lana, like Lucy, has trouble expressing herself, and Gill, like Fouts, strategically translates what Lucy means by different phrases. Lana, Gill notes, had been using this language system for "approximately two years" when he conducted this experiment, so she already should have had a grasp of the language (Gill 227). However, he states that over the course of the experiment, she "spontaneously used an important grammatical form in which she had never been taught:" past tense (Gill 243). He determines that Lana uses past tense when, after he puts a cabbage into Lana's vending device, she types, "Tim put cabbage in machine" (Gill 244). Gill concludes that Lana must have intended to type this sentence and acted on her desire. When, just before her use of the "past tense," she types the nonsensical phrase "Tim swing," he claims that it "was probably a typing error" (Gill 244). Gill here ignores data inconsistent with his conclusion, focusing only on those that support his position. Like Fouts, he exhibits a confirmation bias.

Both Fouts and Gill show such desire to prove their hypotheses that their judgments might have been skewed by some psychological phenomenon. E. O. Wilson proposes the existence of such a phenomenon in his essay "Biophilia and the Environmental Ethic." Wilson refers to "the innately emotional affiliation of human beings to living organisms" as "biophilia" and notes that humans and chimpanzees share many of the same "biophilic" tendencies, such as a "strong natural fear of snakes" (Wilson 165, 167). This similarity suggests an evolutionary closeness between humans and apes that could evince itself as "attraction" (Wilson 165).

While Fouts's *Next of Kin* is, according to Jane Goodall's introduction, "a story of a scientific experiment," it more closely resembles a study of his emotional relationships with different chimpanzees (Goodall ix). If Fouts intended this "experiment" to determine whether humans can love chimpanzees, it succeeds; tender anecdotes and photos demonstrate that Fouts loved these animals. However, this emotional attachment would prove nothing new, as people have long enjoyed relationships with dogs and cats, animals that are less closely related to humans than are chimps. However, it seems more plausible that Fouts intended this "experiment" to prove that "they [chimpanzees] are us" (Fouts 384). If this were the case, as I believe it is, Fouts's love for the animals only distorts his results and his conclusion by producing a bias that has no place in the scientific method. Gill exhibits this tendency to a lesser degree. His references to Lana by name suggest some attachment to the chimpanzee; this affection might have been expected, given that Gill previously had performed several experiments on Lana. Biophilia, it seems, may explain the confirmation bias exhibited by both Fouts and Gill.

In his *How We Got to Be Human*, William Libaw considers how the language difference might have arisen. He cites several theories about this evolutionary change but prefers the hypothesis that "human symbol-using capability and language coevolved" (Libaw 262). In other words, both the cognitive capabilities and physical traits required for language evolved together, culminating in humankind's ability to use "complete spoken language" (Libaw 259). To explain this cognitive ability, Libaw mentions "strong evidence for specific genetic language capability [. . .] seen in the effortless, speedy,

spontaneous, and unthinking acquisition of language by two-to-four-year-old children” (Libaw 262). As empirical support for the physical changes, he notes studies showing that “the human larynx, tongue, and lips” are “the results of genetic changes” (Libaw 262).

In coming decades, the Human Genome Project, in conjunction with animal genome research, will bring to light the genetic differences that have enabled each human “to keep with an unchanged body in harmony with the changing universe” (Darwin 132). Humankind’s ability to adapt has depended on its various achievements, both social and scientific. The capacity for these achievements is grounded in linguistic ability. It seems that differences of degree in mental capacity and basic physiology, especially in the case of the larynx, crossed some threshold, leading to a profound difference of ability or, in the words of ethicist James Rachels, “a difference of kind”: the language difference (Rachels 57). “Our cousin neanderthals” may have had sophisticated communication skills (Libaw 265). However, unlike the skills of modern humans, theirs never blossomed into rich culture, so one may assume that they had not crossed this linguistic threshold. Before humans become too enamored with this difference, they must remember why it exists. Humankind has emerged as a dominant species because of random genetic variation; indeed “man is but a modified ape” (Rachels 1). If humans wish to pursue the only responsible course of action, they must remember that while they are unique in their abilities, they are not intrinsically superior to their kin in the animal kingdom.

References

- Darwin, Charles. *The Descent of Man, and Selection in Relation to Sex*. Vols. 21 and 22 of *The Works of Charles Darwin*. 29 vols. London: Pickering, 1989.
- Descartes, René. *Discourse on the Method for Conducting One’s Reason Well and for Seeking Truth in the Sciences*. Indianapolis: Hackett, 1998.
- Fouts, Roger, and Stephen Tukul Mills. *Next of Kin: What Chimpanzees Have Taught Me about Who We Are*. New York: Morrow, 1997.
- Gill, Timothy V. “Conversations with Lana.” *Language Learning by a Chimpanzee: The LANA Project*. Ed. Duane M. Rumbaugh. New York: Academic, 1977. 225-246.
- Goodall, Jane. Introduction. *Next of Kin: What Chimpanzees Have Taught Me about Who We Are*. New York: Morrow, 1997. ix-xi.
- Gould, Stephen Jay. *Full House: The Spread of Excellence from Plato to Darwin*. New York: Three Rivers, 1996.
- Libaw, William H. *How We Got to Be Human: Subjective Minds with Objective Bodies*. Amherst: Prometheus, 2000.
- Marks, Jonathan. *What It Means to Be 98% Chimpanzee*. Los Angeles: University of California, 2002.
- Rachels, James. *Created from Animals: The Moral Implications of Darwinism*. New York: Oxford UP, 1990.
- Wilson, Edward O. “Biophilia and the Environmental Ethic.” *In Search of Nature*. Washington: Island, 1996. 165-179.