



## Book Review

**Kanzi: The Ape at the Brink of the Human Mind.** By Sue Savage-Rumbaugh and Roger Lewin. John Wiley and Sons, New York, 1994, xvii + 299 pp., \$24.95 (hardback).

What if a chimpanzee were raised with all the comforts and artifacts of a human society? Would it learn language as a human child does? At one point in the history of the teaching-language-to-chimpanzee studies — when Washoe, Nim, and Sarah, the best-known of the language-learning subjects, were young—the answer would have been a confident “yes.” Then came the 1980s, when criticisms from many quarters led to a reevaluation of that “yes.” The critiques came from linguists who claimed that the accomplishments of the chimpanzee fell far short of human language, from ape-language researchers who claimed that even these minimal accomplishments were more apparent than real (reflecting the way that the humans structured interactions for them rather than their own communicative abilities), but also from the author of *Kanzi*, Sue Savage-Rumbaugh, who calmly pointed out that the evidence that the chimpanzees were using their signs as symbols was thin. Since then, when the vehement criticisms from the first two camps had all but destroyed public support for, and interest in, teaching language to chimpanzees, Savage-Rumbaugh has methodically gone about trying to convince herself (and, in the process, others) that apes can use symbols to communicate.

*Kanzi: The Ape at the Brink of the Human Mind* is convincing, up to a point. Written for the layperson, the book is not a research report of the many excellent studies Savage-Rumbaugh has done (they are mentioned in the text and references are given) but, instead, a well-written story of how she has attempted to break down the wall that exists between human and ape (on one side of the wall, we have humans who are proficient language-users; on the other side, apes, which are said to be language-less). In conjunction with Roger Lewin, a science writer, Savage-Rumbaugh recounts how she became interested in the chimpanzee projects first at Oklahoma and later at Yerkes Primate Center, and the inroads she has

made in teaching chimpanzees and bonobos about language. One of the most interesting chapters is the account of how Sherman and Austin, two chimpanzees who were originally both incapable of generalizing a "word" beyond the situation in which it was taught, subsequently learned to spontaneously communicate requests to each other via words (actually a point at an arbitrary symbol standing for an object). The chapter not only provides evidence that these words had begun to function as symbols rather than mere associations for Sherman and Austin, but also lays out the kind of laborious training needed to get the chimpanzee to this point.

This effortful training stands in contrast to Kanzi's education. Kanzi is the star of the book and is a bonobo raised from birth in an environment where spoken words and the language board (arbitrary symbols to which one can point to convey an object or action) were spontaneously used to communicate with him. In response, Kanzi's accomplishments are impressive and, given Savage-Rumbaugh's sensitivity to criticisms raised about the earlier chimpanzee work and caution in making claims in the past, are not likely to be figments of the human observer's imagination.

Understandably given that Savage-Rumbaugh felt herself under siege from all camps, the book focuses only on what Kanzi can do and does not dwell on what he cannot (or at least, does not) do. Nevertheless, it is important to keep in mind that there are differences between Kanzi and a language-learning child. For example, many of the illustrations of Kanzi's communications are comments on aspects of his world. However, what we learn from the research publications (Greenfield and Savage-Rumbaugh, 1991) is that comments account for only 4% of Kanzi's communications. In other words, almost all of his communications come about because he wants something done, not because he wants to chat. Although undoubtedly real, these few comments do not appear to be the norm for the ape, and their strikingly low frequency stands in contrast to young human language-learners, who use their language at least as often to make conversation as to make requests.

Another of the significant differences between child and ape is that, while apes appear to require a great deal of linguistic input to develop language, human children, even if lacking a model for language altogether, will actually invent a language to communicate with those around them. Deaf children, whose hearing losses prevent them from acquiring speech and whose hearing parents have not yet exposed them to a sign language, use gestures to make requests as well as to comment on the past, present, and future and even on their own gestures. Moreover, the children's gestures are structured at both the word/gesture and the sentence levels and have grammatical categories, similar to the early sentences of child language (Goldin-Meadow and Mylander, 1990). This difference between child

and ape is particularly important when making an evolutionary argument, since it is the ability to invent a system (and not just learn it) that is critical for such an argument to be persuasive.

Thus, while the wall between ape and human language may be permeable, Kanzi is not equivalent to a human child in terms of either language-learning or language-creating abilities. Savage-Rumbaugh herself is undoubtedly well aware of the differences between child and ape, but the book pays them little mind—an unfortunate omission particularly since these differences take on new interest in light of the fact that there appear to be some similarities between child and ape language. Indeed, one is tempted to ask why apes, particularly those provided with many of the artifacts of human culture, do not invent language given that they seem to be able to learn at least its rudimentary aspects.

One possibility is that they do and have and that we have not looked in the right place. The authors sometimes mention the natural communications that apes use in the wild, arguing that we may well be underestimating the structure of such systems. Another place we may be underestimating the ape is in its use of gesture. Throughout the book, Kanzi's gestures are frequently mentioned in passing, but no systematic attention is paid to them aside from the pointing gesture he uses to indicate the desired agent in requests. Indeed, over the course of her studies (and the book) Savage-Rumbaugh begins to concentrate solely on Kanzi's ability to understand human speech and on his attempts to produce it. This focus on speech (as opposed to nonverbal symbols like gesture which can have language-like properties) is perhaps excessively narrow, particularly in the origins of language chapter, given that humans are completely equipotential when it comes to learning a spoken language vs. a gestural language such as American Sign Language. Why should speech be the most important yardstick against which the ape's accomplishments are measured?

What then do we learn from successfully teaching a bit of language to an ape? One fascinating outcome that is mentioned in the book is what we can learn about the relationship between language and thought. For example, language-competent apes are able to learn to use a joystick on a computer through simple observation while language-naive apes must be trained to do so bit by bit. By comparing apes that are language-users with apes that are not, we can begin to get a sense of which tasks are facilitated by knowing symbols (and which are not).

Kanzi's story is well-told. The book captures Savage-Rumbaugh's extensive knowledge of apes, as well as her deep respect and affection for them, and it does so in a very readable way. Moreover, the book paves a path away from the fruitless question of whether apes do or do not have language toward more interesting questions, such as which aspects of hu-

man language are within an ape's capabilities (and which are not), and which artifacts of human culture must be in place before those abilities can be tapped.

#### REFERENCES

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