Book Review

Ape Language: From Conditioned Response to Symbol. By E. Sue Savage-Rumbaugh. Columbia University Press, New York, 1986, xxv + 433 pp., $40.00.

When a linguist sees a volume entitled *Ape Language,* his first reaction is, "What? Another of those?" It is gratifying to be able to report that the present volume, despite its title (which seems designed to catch just the kind of journalistic attention the writer rightly deplores), is emphatically not just "another of those."

Sue Savage-Rumbaugh (henceforth S) has been engaged over the last several years in a series of experimental procedures designed, not to "see if apes can learn language," but to probe, in a systematic way, just what it is that apes really learn when people try to teach them symbolic systems. It is thus very much a "third-stage" ape-language book (the first stage being one of euphoric overoptimism; the second, one of post-Nimian pessimism). Far from endorsing stage 1 claims, S began by doubting something that even most skeptics had been prepared to accept.

Many of those who denied syntax to apes failed to challenge what earlier researchers from the Gardners to Terrace had simply taken for granted: that when apes used signs or symbols, they were using them referentially. S shows convincingly that the first ape she worked with, Lucy (and by implication all the "first-generation" apes), "referred" to objects only when they or their images were physically present. One of the crucial dimensions that characterizes human use of symbols—their use in the absence of any referent—was never demonstrated.

S accordingly set out, with the aid of the two chimpanzees Sherman and Austin, to see whether apes could acquire true reference. The short answer is that they apparently can acquire it, or at least many aspects of it. The long answer—that it is very hard indeed to bring them to a stage at which they can do this—forms the core of the book.

One of the book's many virtues is the candor and thoroughness with which S chronicles her failures as well as her successes. The failures showed, in a variety of ways, that what you think you have taught an ape may be very

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different from what that ape has actually learned. It is not enough to present apes with a problem and simply expect them to "solve" it. How the ape perceives the situation may be quite different from how the experimenter perceives it. S had the good sense to appreciate that her pupils were not mere passive recipients of training, but intelligent creatures with minds, wills, and motives of their own. Given this, it became at once apparent why there were some types of symbolic behavior that the two chimpanzees seemed incapable of learning, while other types appeared quite spontaneously, even in the face of initial discouragement by teachers (p. 327).

There is not space in a review to recount in detail all the thoughtfulness and ingenuity that went into S's experimental procedures. These were based on the "lexigram" system originally used with chimpanzee Lana (Rumbaugh *et al.*, 1973; Rumbaugh, 1977), and skillfully mixed operant conditioning with "education" in its original sense: the drawing out of latent potentials in the subjects. For instance, S realized that a major problem in getting apes to use symbolic systems was that of meaningful contextualization. As long as communication was between human and ape, you could never finally lay the ghost of Clever Hans; you could do this only if you could get the apes to communicate symbolically with one another. But what could you get them to communicate about, given that they already had a communication system that answered all their needs? The answer, deceptively simple: give them new needs. Chimpanzees do not naturally engage in food-sharing behavior. But they can be operant-conditioned to practice it, and once ape B (the provider) knows that ape A (the requester) will share with him, A can then ask B (by pressing the appropriate lexigram) for particular foods and B, correctly reading the lexigram, will give them to him.

It is here that S's work touches on wider issues. S believes that food-sharing and similar cooperative behaviors played an important role in the development of language in our own species. A reasonable case can be made out for this, but S spoils it by her simplistic summary:

> Once a strategy of co-operatively sharing food resources among group members appeared, the race for bigger and better brains would begin. It would be fueled by the need for groups to outplan one another by co-operation. Co-operation in obtaining a goal would need to be matched by co-operation in sharing that goal. As co-ordination became the key to reproductive capacity, humankind would inevitably evolve towards the superbly communicative creature that walks the earth today. (p. 148)

The empty rhetoric of passages like this is a sad contrast to the patient, thorough, and insightful research description that constitutes the bulk of the volume. How on earth—to take just one aspect of the passage—could small hominid groups, each presumably subsisting on its own range, "outplan one another?" Was hominid evolution some kind of TV game show? Why should they even want to outplan one another when it was simpler by far to move to another range where there weren't as yet any hominids?