

Speaking Bonobo

Bonobos have an impressive vocabulary, especially when it comes to snacks

By Paul Raffaele

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Sue Savage-Rumbaugh (with Kanzi in 2003) says her bonobos can communicate with her and each other using more than 348 symbols.

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To better understand bonobo intelligence, I traveled to Des Moines, Iowa, to meet Kanzi, a 26-year-old male bonobo reputedly able to converse with humans. When Kanzi was an infant, American psychologist Sue Savage-Rumbaugh tried to teach his mother, Matata, to communicate using a keyboard labeled with geometric symbols. Matata never really got the hang of it, but Kanzi—who usually played in the background, seemingly oblivious, during his mother’s teaching sessions—picked up the language.

Savage-Rumbaugh and her colleagues kept adding symbols to Kanzi’s keyboard and laminated sheets of paper. First Kanzi used 6 symbols, then 18, finally 348. The symbols refer to familiar objects (yogurt, key, tummy, bowl), favored activities (chase, tickle), and even some concepts considered fairly abstract (now, bad).

Kanzi learned to combine these symbols in regular ways, or in what linguists call "proto-grammar." Once, Savage-Rumbaugh says, on an outing in a forest by the Georgia State University laboratory where he was raised, Kanzi touched the symbols for "marshmallow" and "fire." Given matches and marshmallows, Kanzi snapped twigs for a fire, lit them with the matches and toasted the marshmallows on a stick.

Savage-Rumbaugh claims that in addition to the symbols Kanzi uses, he knows the meaning of up to 3,000 spoken English words. She tests his comprehension in part by having someone in another room pronounce words that Kanzi hears through a set of headphones. Kanzi then points to the appropriate symbol on his keyboard. But Savage-Rumbaugh says Kanzi also understands words that aren’t a part of his keyboard vocabulary; she says he can respond appropriately to commands such as "put the soap in the water" or "carry the TV outdoors."

About a year ago, Kanzi and his sister, mother, nephew and four other bonobos moved into a \$10 million, 18-room house and laboratory complex at the Great Ape Trust, North America’s largest great ape sanctuary, five miles from downtown Des Moines. The bonobo compound boasts a 13,000-square-foot lab, drinking fountains, outdoor playgrounds, rooms linked by hydraulic doors that the animals operate themselves by pushing buttons, and a kitchen where they can use a microwave oven and get snacks from a vending machine (pressing the symbols for desired foods).

Kanzi and the other bonobos spend evenings sprawled on the floor, snacking on M & M’s, blueberries, onions and celery, as they watch DVDs they select by pressing buttons on a computer screen. Their favorites star apes and other creatures friendly with humans such as *Quest for Fire*, *Every Which Way*

But Loose, Greystoke: The Legend of Tarzan and Babe.

Through a glass panel, Savage-Rumbaugh asks Kanzi if it's OK for me to enter his enclosure. "The bonobos control who comes into their quarters," she explains. Kanzi, still the alpha male of this group in his middle age, has the mien of an aging patriarch—he's balding and paunchy with serious, deep-set eyes. Squealing apparent agreement, he pushes a button, and I walk inside. A wire barrier still separates us. "Kanzi can cause you serious damage if he wants," Savage-Rumbaugh adds.

Kanzi shows me his electronic lexigram touch pad, which is connected to a computer that displays—while a male voice speaks—the words he selects. But Kanzi's finger slips off the keys. "We're trying to solve this problem," says Savage-Rumbaugh.

She and her colleagues have been testing the bonobos' ability to express their thoughts vocally, rather than by pushing buttons. In one experiment she described to me, she placed Kanzi and Panbanisha, his sister, in separate rooms where they could hear but not see each other. Through lexigrams, Savage-Rumbaugh explained to Kanzi that he would be given yogurt. He was then asked to communicate this information to Panbanisha. "Kanzi vocalized, then Panbanisha vocalized in return and selected 'yogurt' on the keyboard in front of her," Savage-Rumbaugh tells me.

With these and other ape-language experiments, says Savage-Rumbaugh, "the mythology of human uniqueness is coming under challenge. If apes can learn language, which we once thought unique to humans, then it suggests that ability is not innate in just us."

But many linguists argue that these bonobos are simply very skilled at getting what they want, and that their abilities do not constitute language. "I do not believe that there has ever been an example anywhere of a nonhuman expressing an opinion, or asking a question. Not ever," says Geoffrey Pullum, a linguist at the University of California at Santa Cruz. "It would be wonderful if animals could say things about the world, as opposed to just signaling a direct emotional state or need. But they just don't."

Whatever the dimension of Kanzi's abilities, he and I did manage to communicate. I'd told Savage-Rumbaugh about some of my adventures, and she invited me to perform a Maori war dance. I beat my chest, slapped my thighs and hollered. The bonobos sat quiet and motionless for a few seconds, then all but Kanzi snapped into a frenzy, the noise deafening as they screamed, bared their teeth and pounded on the walls and floor of their enclosure. Still calm, Kanzi waved an arm at Savage-Rumbaugh, as if asking her to come closer, then let loose with a stream of squeaks and squeals. "Kanzi says he knows you're not threatening them," Savage-Rumbaugh said to me, "and he'd like you to do it again just for him, in a room out back, so the others won't get upset."

I'm skeptical, but I follow the researcher through the complex, out of Kanzi's sight. I find him, all alone, standing behind protective bars. Seeing me, he slapped his chest and thighs, mimicking my war dance, as if inviting me to perform an encore. I obliged, of course, and Kanzi joined in with gusto.

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