

The Gentle Genius of Bonobos

Part 1

There are many people who think that the animal world is **hardwired**¹ and that there's something very, very special about man. Maybe it's his ability to have **causal thought**.² Maybe it's something special in his brain that allows him to have language. Maybe it's something special in his brain that allows him to make tools or have mathematics . . .

So what I want to do now is introduce you to a species called the bonobo. This is Kanzi. He's a bonobo. Right now, he's in a forest in Georgia. His mother originally came from a forest in Africa. And she came to us when she was just at puberty, about six or seven years of age. . . .

This is Kanzi and I, in the forest. None of the things you will see in this particular video are trained. None of them are tricks. They all happened to be captured on film spontaneously, by NHK of Japan. We have eight bonobos.

Savage-Rumbaugh (video): Look at all this stuff that's here for our campfire. S-R: An entire family at our research center. S-R (video): You going to help get some sticks? Good. We need

more sticks, too. I have a lighter in my pocket if you need one. That's a wasps' nest. You can get it out. I hope I have a lighter. You can use the lighter to start the fire. S-R: So Kanzi is very interested in fire. He doesn't do it yet without a lighter, but I think if he saw someone do it, he might be able to do—make a fire without a lighter. He's learning about how to keep a fire going. He's learning the uses for a fire, just by watching what we do with fire. . . . This is his sister. This is her first time to try to drive a golf cart. S-R (video): Good-bye. S-R: She's **got** the pedals **down**,³ but not the wheel. She switches from reverse to forward and she holds onto the wheel, rather than turns it. Like us, she knows that that individual in the mirror is her. Narrator: By raising bonobos in a culture that is both bonobo and human, and documenting their development across two decades, scientists are exploring how cultural forces may have operated during human evolution. His name is Nyota. It means "star" in Swahili. Panbanisha is trying to give Nyota a haircut with a pair of scissors. In the wild, the parent bonobo is known to **groom**⁴ its offspring. Here Panbanisha uses scissors, instead of her hands, to groom Nyota. Very impressive. Subtle maneuvering of the hands

¹ Note that the term "hardwired" was also used by TED speaker Nic Marks. In this case, Savage-Rumbaugh is referring to our biological make-up.

² "Causal thought" refers to recognizing cause-and-effect relationships between events and using this to problem-solve and understand your surroundings.

³ When someone has "got something down," it means they understand. Savage-Rumbaugh is saying that Kanzi's sister has figured out how the pedals work, just not the steering wheel.

⁴ The verb "groom" is more commonly used to talk about animals than humans. With animals, it means to brush or clean hair or fur. With humans, it involves tidying your appearance, such as fixing your hair or putting on makeup.

is required to perform delicate tasks like this. Nyota tries to imitate Panbanisha by using the scissors himself. Realizing that Nyota might get hurt, Panbanisha, like any human mother, carefully tugs to get the scissors back. . . . He can now cut through tough animal **hide**.⁵ S-R Kanzi's learned to make stone tools. Narr: Kanzi now makes his tools, just as our ancestors may have made them, two-and-a-half million years ago—by holding the rocks in both hands, to strike one against the other. He has learned that by using both hands and aiming his glancing blows, he can make much larger, sharper **flakes**.⁶ Kanzi chooses a flake he thinks is sharp enough. The tough hide is difficult to cut, even with a knife. The rock that Kanzi is using is extremely hard and ideal for stone tool-making, but difficult to handle, requiring great skill. Kanzi's rock is from Gona, Ethiopia, and is identical to that used by our African ancestors two-and-a-half million years ago. These are the rocks Kanzi used and these are the flakes he made. The flat, sharp edges are like knife blades. Compare them to the tools our ancestors used; they **bear a striking resemblance**⁷ to Kanzi's.

Part 2

S-R: These are her symbols on her keyboard. They speak when she touches them. Narr: Panbanisha is communicating to Dr. Sue where she wants to go. "**A-frame**"⁸ represents a hut in the woods. Compare the chalk writing with the **lexigram**⁹ on the keyboard. Panbanisha began writing the lexigrams on the forest floor. S-R (video): Very nice. Beautiful, Panbanisha. S-R: At first we didn't really realize what she was doing, until we stood back and looked at it and rotated it. Narr: This lexigram also refers to a place in the woods. The curved line is very similar to the lexigram. The next symbol Panbanisha writes represents "collar." It indicates the collar Panbanisha must wear when she goes out. S-R: That's an **institutional requirement**.¹⁰ Narr: This symbol is not as clear as the others, but one can see Panbanisha is trying to produce a curved line and several straight lines. Researchers began to record what Panbanisha said, by writing lexigrams on the floor with chalk. Panbanisha watched. Soon she began to write as well. The bonobo's abilities have stunned scientists around the world. How did they develop?

⁵ A "hide" is animal skin that has been made into leather.

⁶ The noun "flake" here is an archeological term that refers to a small, sharp piece of stone that has been intentionally broken off to be used as a tool.

⁷ Something that "bears a striking resemblance" to something else looks almost exactly the same.

⁸ An "A-frame" describes the triangle shape of a simply constructed building.

⁹ A "lexigram" is a symbol that represents a specific word.

¹⁰ When Savage-Rumbaugh says "institutional requirement," she means that it's a rule in their research facility. Anytime a bonobo goes outside, the ape must wear a collar.

S-R (video): We found that the most important thing for permitting bonobos to acquire language is not to teach them. It's simply to use language around them, because the driving force in language acquisition is to understand what others, that are important to you, are saying to you. Once you have that capacity, the ability to produce language comes rather naturally and rather freely. So we want to create an environment in which bonobos, like all of the individuals with whom they are interacting—we want to create an environment in which they have fun, and an environment in which the others are meaningful individuals for them. Narr: This environment brings out unexpected potential in Kanzi and Panbanisha. . . .

Researcher (video): OK, now get the **monsters**.¹¹ Get them. Take the cherries, too. Now watch out, stay away from them

now. Now you can chase them again. Time to chase them. Now you have to stay away. Get away. Run away. Run. Now we can chase them again. Go get them. Oh, no! Good, Kanzi. Very good. Thank you so much. . . . S-R: So we have a bi-species environment; we call it a "panhomoculture." We're learning how to become like them. We're learning how to communicate with them, in really high-pitched tones. We're learning that they probably have a language in the wild. And they're learning to become like us. Because we believe that it's not biology; it's culture. So we're sharing tools and technology and language with another species.

Thank you.

¹¹ The word "monsters" is used to refer to the creatures in the video game that the bonobo is playing in the video. The video game, called Pac-Man, was popular during the 1980s.