



Psychologist Herbert Terrace with Nim Chimpsky in the 1970s, and today (below).

Q&A Herbert Terrace

The interpreter

In 1973, Herbert Terrace, a psychologist at Columbia University in New York, embarked on an experiment to teach sign language to an infant chimpanzee named Nim Chimpsky, after linguist Noam Chomsky. On the release of the documentary *Project Nim*, Terrace talks about research ethics, chimp cognition and the origins of language.

How did the experiment come about?

After serving as a graduate assistant at Harvard University with behavioural psychologist B. F. Skinner, I heard that Allen and Beatrix Gardner at the University of Nevada, Reno, were teaching sign language to a chimpanzee named Washoe. But when I looked at their data, I wasn't sure that the chimp's sequences of hand signs were grammatical. I decided to do a study to collect everything a chimp signed, and document the circumstances. We wanted to have full records of the discourse between the infant chimp and the caretaker.

How did you get started?

I went to the Institute for Primate Studies in Norman, Oklahoma, and the director offered me a newborn chimp. My PhD student volunteered the use of her New York townhouse, and we tried to immerse the young chimp in a sign-language-only environment, although neither of us was fluent. Then the president of Columbia University provided a mansion in Riverdale in exchange for us paying the heating



bill. The project shifted into the hands of Laura Ann Petitto, an enthusiastic student who kept good records and who is now a cognitive neuroscientist studying language at Gallaudet University in Washington DC.

Did the experiment meet your expectations?

The language didn't materialize. A human baby starts out mostly imitating, then begins to string words together. Nim didn't learn. His three-sign combinations — such as 'eat me eat' or 'play me Nim' — were redundant. He imitated signs to get rewards. I published the negative results in 1979 in the journal *Science*, which had a chilling effect on the field.

Why couldn't Nim put a sentence together?

I haven't seen any evidence that a chimp has a theory of mind. It can predict behaviour, but the concept of another individual's thinking is foreign to it. So it is pointless for a chimp to start a conversation: why talk unless you expect a reply? Rhesus macaques are able to learn a long sequence of images by trial and error, but no one has accused them of having language. Even if you could get a chimp to learn calculus, it will never converse.

Project Nim
DIRECTED BY JAMES MARSH
In US cinemas now.
UK release on 12 August.

Humans have language not because we are smart, but because we are social and sensitive to the thoughts of others.

How did the experiment end?

Nim was getting bigger, and you couldn't take the chimp out of him. He knew when people were afraid, and he would bite them if they weren't confident. So I flew him back to Oklahoma. Most people were angry at me when I called off the project. They thought it was cruel. And they were right: it is emotionally wrenching to socialize a chimp as a child and then put him back with chimps. But what is the alternative? If I were to undertake this again, I would give more thought to what happens when the project ends. You have to find a permanent home for him, a facility with space for a few chimps, and visits from the original caretakers. It is unkind if you don't have an exit strategy.

What became of Nim?

When the institute in Oklahoma ran out of funding, they sold off their chimps for medical research. But I felt that to have an intelligent and well-trained chimp subjected to hepatitis research was immoral. The president of New York University, which operated the medical-research facility, set Nim free. He lived the rest of his life in a giant cage at a ranch for celebrity animals in Texas. In 2000, at the age of 26, he died of a heart attack.

Did Nim's fate change your views on the ethics of animal research?

Some people want to abolish animal research, but I don't think they understand the scientific loss and the implications for the welfare of humans. If you can get the same information without using an animal, you shouldn't use one. But there are medical experiments in which you have to sacrifice an animal. These must be done as humanely as possible. Other experiments can enhance the animal's environment. I've taught monkeys video games to test their memory. After a vacation they're raring to go again. To get good data, you want the animal to be happy.

What did you think of the film *Project Nim*?

I thought it was brilliant but I had some misgivings. There wasn't a concise explanation of why you would want to teach sign language to a chimp, or why Nim couldn't acquire language. It portrayed me as an absentee landlord and suggests that I didn't care emotionally about him. This was not true: I drove him to his mansion and spent time playing and signing with him. But he was the subject of a scientific study, and I emphasized the scientific goal. I did not think of him as a child. ■

INTERVIEW BY JASCHA HOFFMAN