

# Innate teaching skills 'part of human nature', study says

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Barry Hewlett, right, working in central Africa.

Some 40 years ago, Washington State University anthropologist Barry Hewlett noticed that when the Aka pygmies stopped to rest between hunts, parents would give their infants small axes, digging sticks and knives.

To parents living in the developed world, this could be seen as irresponsible. But in all the intervening years, Hewlett has never seen an infant cut him- or herself. He has, however, seen the exercise as part of the Aka way of [teaching](#), an activity that most researchers - from anthropologists to psychologists to biologists - consider rare or non-existent in such small-scale cultures.

He has completed a small but novel study of the Aka, concluding that, "teaching is part of the human genome."

"It's part of our [human nature](#)," said Hewlett, a professor of anthropology at WSU Vancouver. "Obviously, teaching as it exists in formal education is way different than the way it exists in small-scale groups that I work with. The thing is, there does seem to be something going on there."

The Aka are among the last of the world's hunter-gatherers, but their way of life accounts for 99 percent of human history. That they teach, and how they teach, offers new insight into who we are as humans and how we might best learn.

Clearly, the Aka are not helicopter parents who would shudder at the thought of giving sharp objects to any children, let alone 1-year-olds. Rather, the Aka place a high value on individual autonomy, in addition to sharing and egalitarianism, so they're unlikely to intervene with one another's behavior.

"One does not coerce or tell others what to do, including children,"

Hewlett and co-author Casey Roulette write in *Royal Society Open Science*, an open-access journal by the world's oldest scientific publisher, The Royal Society of London.

After he saw the Aka teaching infants how to use various tools, he was told by social-cultural anthropologists that the activity was "just play." To their credit, said Hewlett, social-cultural anthropologists have recognized that teaching can be done outside a formal setting.

"The downside to that is they hadn't looked at teaching more broadly as part of human nature," he said.

But [cognitive psychologists](#) and evolutionary biologists suggested teaching is universal. Hewlett was particularly intrigued by the thinking of cognitive psychologists like Gyorgy Gergely of Central European University.

Gergely described an innate form of teaching called "natural pedagogy" in which a teacher directly demonstrates skills by, say, pointing, gazing or talking to a child. The learners in turn use the cues to imitate and learn about novel objects.

"It's important to remember that, cognitively, teaching occurs both in the teacher as well as in the child," said Hewlett. "The child needs to know that these particular cues mean something and the teacher knows how to use these particular cues to draw attention to knowledge that may not be clear to the learner. It's a co-evolution in the sense that it's happening both with the child and the so-called teacher."

Hewlett videotaped five male and five female 12- to 14-month-old infants for one hour each, usually in a naturalistic setting in or near their camp. He would have liked to videotape more but civil war in the Central African Republic made that impossible.

Later, Hewlett, Roulette and a person unfamiliar with the hypotheses coded the taped behavior of children and adults to identify moments when an adult modified his or her behavior to enhance learning, researchers' minimalist definition of teaching.

The researchers documented 169 discrete teaching events, like a caregiver demonstrating how to use a knife. Almost half lasted less than three seconds, with teachers giving positive and negative feedback, demonstrating activities, pointing, giving verbal instruction and "opportunity scaffolding"- providing an object like a digging stick and the chance to use it.

Hewlett said he was surprised to see how frequently the Aka teach their infants. More than 40 percent of the time, infants imitated skills to which they were exposed. On average, for less than four minutes average of teaching, they practiced skills for more than nine minutes.

The teaching interventions were brief and subtle, and Hewlett came to appreciate the value of letting the child learn as much as possible on his or her own.

"We know learning can be very rapid when it is self-motivated," he said. "When you take away the autonomy of the child, that impacts the self-motivation of the child."

The technique gives the child more choices and serves as an alternative to [helicopter parents](#) who hover over an infant and say, "go do this, go do that, you need to do this, you need to do that."

"This way steps backward in the other direction," he said, as in, "I need to provide advice here or there but I don't have all the right answers for my child."

Provided by Washington State University

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