Copycats and Culture

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Young kids have to figure out everything about the adult world. Think about it: They have no innate understanding of how to get peanut butter out of a jar, or how to switch to the cartoon channel, or how to tie a shoe. So they figure these things out mostly by watching others very closely—and aping what they see.

Well, not aping exactly. Apes imitate too, but they focus on the goal rather than the drill. Kids are high-fidelity copycats, precisely mimicking every adult action, including arbitrary and irrelevant and counterproductive actions. If an adult were to touch the peanut butter jar with his nose before twisting off the cap, a two-year-old would figure that's the accepted way to open a peanut butter jar.

That doesn't seem very efficient. What purpose could such mindless mimicry possibly serve? Is it just a maladaptive error of human evolution? Or is it perhaps a feature only of Western cultures, where doting parents tend to instruct their kids in very explicit ways?

Psychologists Mark Nielsen and Keyan Tomaselli favored the latter explanation—in part because over-imitation has only been observed in affluent urban cultures. What's more, parents in many indigenous cultures are much more casual about instruction in basic life skills. They don't spell everything out in detail. The scientists decided to test this idea by comparing kids in two very different cultures. Nielsen is a professor at the University of Queensland, Australia; Tomaselli, a professor at University of KwaZulu-Natal, in South Africa. So they decided to test and compare kids in their own backyards.

They recruited a sample of kids from Brisbane, an industrial city of 2 million and capital of Queensland, and a sample from a remote Bushman community in South Africa's Kalahari Desert. The kids were all between 2 and 6 years old—the age span during which over-imitation typically occurs. The kids were given various versions of a learning task, all of which went essentially like this: The kids were shown a box and a stick, and the goal was simply to open the box, as demonstrated by an adult. But the adults' modeling varied. Sometimes the adult would open the box the most economical way possible, by simply pulling a knob, but other times the adult might use the stick to open the door. The stick worked okay, but it was unnecessary, and actually made the task a bit more difficult. Other times the adult rotated the stick three times before opening the box—an irrelevant action akin to putting your nose on the peanut butter jar. The idea was to see how precisely the kids from the two cultures mimicked the adults.

The findings were unambiguous, and not at all what Nielsen and Tomaselli had guessed. In short, the rural African kids and the urban Australian kids were indistinguishable. Both copied the irrelevant stick rotation when it was modeled, as if that was a perfectly normal step in the box-opening drill. And kids from both cultures were also equally likely—and more likely than controls—to use the stick for opening the box—if that's what they saw the adult do. What's more, the irrelevant and counterproductive movements were *only* replicated by kids who observed adults modeling the actions, never by kids left to their own devices. These findings suggest that the kids were intentionally (and uncritically) mimicking

the adults, step by precise step.

They also suggest that high-fidelity copycatting is pervasive among young children, perhaps universal. But why? The scientists have a theory, which they describe on-line this week in the journal *Psychological Science*: When an adult models an action, kids assume that they're supposed to learn something new; they see the modeling as purposeful. Eons of evolution have hard-wired this habit into the neurons—so it's hard to be flexible, even when some of the actions are irrelevant.

But why has evolution hard-wired this habit of mind? Though it may seem maladaptive at first, it is quintessential to the creation and transmission of human culture, the scientists believe. They offer the example of meat: Knowing that a group cooks meat doesn't tell us much about that group. There are hundreds of ways to prepare meat. Knowing *how* they cook meat says much more—that's a hallmark of culture. Two-year-old copycats, in that sense, are simply in practice to be cultural beings.

Excerpts from "We're Only Human" appear regularly in *The Huffington Post* and *Scientific American Mind*. Wray Herbert's book, *On Second Thought: Outsmarting Your Mind's Hard-Wired Habits*, will be published by Crown in September.