



The Ape and the Sushi Master

Cultural Reflections
by a Primatologist

Frans de Waal

implicit scoring guide



A Member of the Perseus Books Group

The Last Rubicon

227

they tend to "keep time" with one another. They wag their heads in time to the steps of their "dance" and appear full of eager enjoyment of their primitive game.¹⁶¹

To bring these tendencies to bear on the issue of culture, we need only look at how chimpanzees learn to crack oil-palm nuts. According to field-workers, the expertise of their animals far exceeds that of any human who tries it for the first time. It takes many years of practice to place one of the hardest nuts in the world on a level surface, find a good-sized hammer stone, and hit the nut with the right speed so as to crack it. It is the most complex tool-use task known from the field, involving both hands, two tools, and exact coordination.

A Japanese primatologist, Tetsuro Matsuzawa, carefully tracked the development of this skill in wild chimpanzees at Bossou, Guinea. Young chimpanzees join the rest of the group at the cracking "factory": a location where the apes gather nuts around anvil stones, pick up hammer stones, and fill the jungle with a steady rhythm of banging noises. Youngsters hang around with the hardworking adults, occasionally pilfering nuts and stones from them to try things out for themselves. They also get a good deal of food from their mothers, who share the kernels of cracked nuts. In this way they learn about the edibility of nuts, and with time also about the connection with stones.

At first, infants are seen handling single objects. They play with a nut or a stone, but do nothing with them together. At

0110-1

IMPETUS FOR CULTURAL STUDIES C

d
r
r
cc
ou
ve
ki
fa.
tl

w
H.
Jni
cei
rol
he
rPi
oni
ori

r. Ca

0110-2

the next stage, infants begin to randomly combine objects. They put nuts on anvil stones, or they push stones and nuts together. They also spend quite a bit of time hitting nuts with a hand, or stamping them hard with a foot, which of course does nothing to open them. Only after three years of futile efforts do they finally begin to coordinate multiple actions to crack a nut with a pair of stones, using one as anvil and the other as hammer. They still need a great deal more coordination and refinement, and so it is only when they are six or seven years old that their skills begin to approach those of adults.¹⁶²

What does this tell us? Here we have young apes whose actions gradually begin to resemble those of their parents without ever having been rewarded. Since they fail continuously for at least three years on end, the incentive for their imitation cannot be in its payoffs. They may even experience negative consequences, such as smashed fingers, or the frustration of knowing that there's food inside the nut while not being able to get to it. What keeps them going?

This question comes up because it has been suggested that imitation never exists for its own sake, but is invariably strengthened or weakened by what it delivers. Bennett Galef, one of the experimental psychologists who, as discussed earlier, is skeptical about animal culture, described the need for reinforcement as follows: "In my view, although imitation might introduce some novel behavior into the repertoire of members of a population, through time (probably counted in

days) this behavioral novelty would be maintained, modified, or extinguished depending on its effectiveness in acquiring rewards."¹⁶³ This sounds logical enough, but is it consistent with the facts? The field research on nut cracking rather shows that young chimpanzees perform an unrewarded activity, copied from their elders, for *over one thousand days* without ever slowing down. Could it be that when it comes to cultural transmission, the traditional emphasis of learning psychologists on tangible incentives is misplaced? Perhaps the copying of others is more like a drive, that is, it reinforces itself.

This would quite simply mean that social learning is *socially* motivated. A young chimpanzee, for example, feels close to mother, identifies with her, and expresses this closeness by watching all her moves and doing everything like her. Young chimpanzees are constantly in search of role models for infant care, feeding techniques, dominance displays, sexual intercourse, and so on. It is this social orientation that feeds their mimicry. Only when the apprentice cracker has achieved enough dexterity and strength to actually open a nut does food enter the picture. This doesn't mean that before this moment nut cracking was not goal-oriented: I rather look at it as a *shifting* of goals. At first, there is the orientation to the mother, and the desire to act like her. In the process, almost by accident, the second goal—to feed on tasty kernels—emerges and gradually takes over from the first.

The same may be true of monkey imitation. Michael Huffman, an American who has worked for twenty years on