

# Scientist Finds the Beginnings of

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## Morality in Primate Behavior

By NICHOLAS WADE

Some animals are surprisingly sensitive to the plight of others. Chimpanzees, who cannot swim, have drowned in zoo moats trying to save others. Given the chance to get food by pulling a chain that would also deliver an electric shock to a companion, rhesus monkeys will starve themselves for several days.

Biologists argue that these and other social behaviors are the precursors of human morality. They further believe that if morality grew out of behavioral rules shaped by evolution, it is for biologists, not philosophers or theologians, to say what these rules are.

Moral philosophers do not take very seriously the biologists' bid to annex their subject, but they find much of interest in what the biologists say and have started an academic conversation with them.

The original call to battle was sounded by the biologist Edward O. Wilson more than 30 years ago, when he suggested in his 1975 book "Sociobiology" that "the time has come for ethics to be removed temporarily from the hands of the philosophers and biologized." He may have jumped the gun about the time having come, but in the intervening decades biologists have made considerable progress.

Last year Marc Hauser, an evolutionary biologist at Harvard, proposed in his book "Moral Minds" that the brain has a genetically shaped mechanism for acquiring moral rules, a universal moral grammar similar to the neural machinery for learning language. In another recent book, "Primates and Philosophers," the primatologist Frans de Waal defends against philosopher critics his view that the roots of morality can be seen in the social behavior of monkeys and apes.

Dr. de Waal, who is director of the Living Links Center at Emory University, argues that all social animals have had to constrain or alter their behavior in various ways for group living to be worthwhile. These constraints, evident in monkeys and even more so in chimpanzees, are part of human inheritance, too, and in his view form the set of behaviors from which human morality has been shaped.

Many philosophers find it hard to think of animals as moral beings, and indeed Dr. de Waal does not contend that even chimpanzees possess morality. But he argues that human morality would be impossible without certain emotional building blocks that are clearly at work in chimp and monkey societies.

Dr. de Waal's views are based on years of observing nonhuman primates, starting with work on aggression in the 1960s. He noticed then that after fights between two combatants, other chimpanzees would console the loser. But he was waylaid in battles with psychologists over imputing emotional states to animals, and it took him 20 years to come back to the subject.

He found that consolation was universal among the great apes but generally absent from monkeys — among macaques, mothers will not even reassure an injured infant. To console another, Dr. de Waal argues, re-

quires empathy and a level of self-awareness that only apes and humans seem to possess. And consideration of empathy quickly led him to explore the conditions for morality.

Though human morality may end in notions of rights and justice and fine ethical distinctions, it begins, Dr. de Waal says, in concern for others and the understanding of social rules as to how they should be treated. At this lower level, primatologists have shown, there is what they consider to be a sizable overlap between the behavior of people and other social primates.

Social living requires empathy, which is especially evident in chimpanzees, as well as ways of bringing internal hostilities to an end. Every species of ape and monkey has its own protocol for reconciliation after fights, Dr. de Waal has found. If two males fail to make up, female chimpanzees will often bring the rivals together, as if sensing that discord makes their community worse off and more vulnerable to attack by neighbors. Or they will head off a fight by taking stones out of the males' hands.

Dr. de Waal believes that these actions are undertaken for the greater good of the community, as distinct from person-to-person relationships, and are a significant precursor of morality in human societies.

Macaques and chimpanzees have a sense of social order and rules of expected behavior, mostly to do with the hierarchical natures of their societies, in which each member knows its own place. Young rhesus monkeys learn quickly how to behave, and occasionally get a finger or toe bitten off as punishment. Other primates also have a sense of reciprocity and fairness. They remember who did them favors and who did them wrong. Chimps are more likely to share food with those who have groomed them. Capuchin monkeys show their displeasure if given a smaller reward than a partner receives for performing the same task, like a piece of cucumber instead of a grape.

These four kinds of behavior — empathy, the ability to learn and follow social rules, reciprocity and peacemaking — are the basis of sociality.

Dr. de Waal sees human morality as having grown out of primate sociality, but with two extra levels of sophistication. People enforce their society's moral codes much more rigorously with rewards, punishments and reputation building. They also apply a degree of judgment and reason, for which there are no parallels in animals.

Religion can be seen as another special ingredient of human societies, though one that emerged thousands of years after morality, in Dr. de Waal's view. There are clear precursors of morality in nonhuman primates, but no precursors of religion. So it seems reasonable to assume that as humans evolved away from chimps, morality emerged first, followed by religion. "I look at religions as recent additions," he said. "Their function may have to do with social life, and enforcement of rules and giving a narrative to them, which is what religions really do."

As Dr. de Waal sees it, human morality may be severely limited by having evolved as a way of banding together against adversaries, with moral restraints being observed only toward the in group, not toward outsiders. "The profound irony is that our noblest achievement — morality — has evolutionary ties to our basest behavior — warfare," he writes. "The sense of community required by the former was provided by the latter."

Dr. de Waal has faced down many critics in evolutionary biology and psychology in developing his views. The evolutionary biologist George Williams dismissed morality as merely an accidental byproduct of evolution, and psychologists objected to attributing any emotional state to animals. Dr. de Waal convinced his colleagues over many years that the ban on inferring emotional states was an unreasonable restriction, given the expected evolutionary continuity between humans and other primates.

His latest audience is moral philosophers, many of whom are interested in his work and that of other biologists. "In departments



## Empathy

The ability to understand the plight of others — empathy — is clearly an essential part of any moral system. Chimpanzees exhibit a variety of behaviors that suggest they have the capacity for empathy, such as helping a frightened young chimp down from a tree.

of philosophy, an increasing number of people are influenced by what they have to say," said Gilbert Harman, a Princeton-University philosopher.

Dr. Philip Kitcher, a philosopher at Columbia University, likes Dr. de Waal's empirical approach. "I have no doubt there are patterns of behavior we share with our primate relatives that are relevant to our ethical decisions," he said. "Philosophers have always been beguiled by the dream of a system of ethics which is complete and finished, like mathematics. I don't think it's like that at all."

But human ethics are considerably more complicated than the sympathy Dr. de Waal has described in chimps. "Sympathy is the raw material out of which a more complicated set of ethics may get fashioned," he said. "In the actual world, we are confronted with different people who might be targets

of our sympathy. And the business of ethics is deciding who to help and why and when."

Many philosophers believe that conscious reasoning plays a large part in governing human ethical behavior and are therefore unwilling to let everything proceed from emotions, like sympathy, which may be evident in chimpanzees. The impartial element of morality comes from a capacity to reason, writes Peter Singer, a moral philosopher at Princeton, in "Primates and Philosophers." He says, "Reason is like an escalator — once we step on it, we cannot get off until we have gone where it takes us."

That was the view of Immanuel Kant, Dr. Singer noted, who believed morality must be based on reason, whereas the Scottish philosopher David Hume, followed by Dr. de Waal, argued that moral judgments proceed from the emotions.

But biologists like Dr. de Waal believe reason is generally brought to bear only after a moral decision has been reached. They argue that morality evolved at a time when people lived in small foraging societies and often had to make instant life-or-death decisions, with no time for conscious evaluation of moral choices. The reasoning came afterward as a post hoc justification. "Human behavior derives above all from fast, automated, emotional judgments, and only secondarily from slower conscious processes," Dr. de Waal writes.

However much we may celebrate rationality, emotions are our compass, probably because they have been shaped by evolution, in Dr. de Waal's view. For example, he says: "People object to moral solutions that involve hands-on harm to one another. This may be because hands-on violence has been subject to natural selection whereas utilitarian deliberations have not."

Philosophers have another reason biologists cannot, in their view, reach to the heart of morality, and that is that biological analyses cannot cross the gap between "is" and "ought," between the description of some behavior and the issue of why it is right or wrong. "You can identify some value we hold, and tell an evolutionary story about why we hold it, but there is always that radically different question of whether we ought to hold it," said Sharon Street, a moral philosopher at New York University. "That's not to discount the importance of what biologists are doing, but it does show why centuries of moral philosophy are incredibly relevant, too."

Biologists are allowed an even smaller piece of the action by Jesse Prinz, a philosopher at the University of North Carolina. He believes morality developed after human evolution was finished and that moral sentiments are shaped by culture, not genetics. "It would be a fallacy to assume a single true morality could be identified by what we do instinctively, rather than by what we ought to do," he said. "One of the principles that might guide a single true morality might be recognition of equal dignity for all human beings, and that seems to be unprecedented in the animal world."

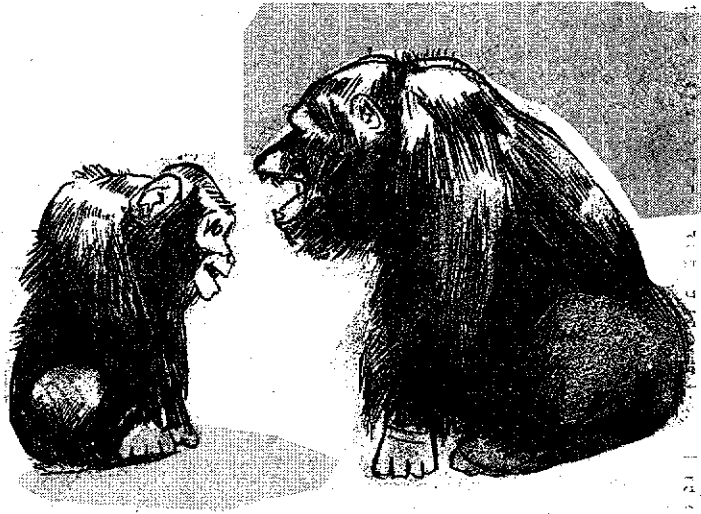
Dr. de Waal does not accept the philosophers' view that biologists cannot step from "is" to "ought." "I'm not sure how realistic the distinction is," he said. "Animals do have 'oughts.' If a juvenile is in a fight, the mother must get up and defend her. Or in food sharing, animals do put pressure on each other, which is the first kind of 'ought' situation."

Dr. de Waal's definition of morality is more down to earth than Dr. Prinz's. Morality, he writes, is "a sense of right and wrong that is born out of groupwide systems of conflict management based on shared values." The building blocks of morality are not nice or good behaviors but rather mental and social capacities for constructing societies "in which shared values constrain individual behavior through a system of approval and disapproval." By this definition chimpanzees in his view do possess some of the behavioral capacities built in our moral systems.

"Morality is as firmly grounded in neurobiology as anything else we do or are," Dr. de Waal wrote in his 1996 book "Good Natured." Biologists ignored this possibility for many years, believing that because natural selection was cruel and pitiless it could only produce people with the same qualities. But this is a fallacy, in Dr. de Waal's view. Natural selection favors organisms that survive and reproduce, by whatever means. And it has provided people, he writes in "Primates and Philosophers," with "a compass for life's choices that takes the interests of the entire community into account, which is the essence of human morality."

## Social Order

Chimpanzees have a sense of social structure and rules of behavior, most of which involve the hierarchy of a group, in which some animals rank higher than others. Social living demands a number of qualities that may be precursors of morality.



## Reciprocity

Frans de Waal argues that the building blocks of human morality can be seen in the behavior of nonhuman primates like chimpanzees. Mutual grooming, for example, shows a sense of fairness or reciprocity, according to Dr. de Waal.



## Peacemaking

Chimpanzees engage in both reconciliation and peacemaking. Male chimpanzees routinely reconcile after fights, which protects their group's social fabric. And Dr. de Waal has described female chimpanzees removing stones from the hands of males about to fight.