Something Like This?

Author: Beardsley, Timothy M.

Source: BioScience, 58(8) : 675

Published By: American Institute of Biological Sciences

URL: https://doi.org/10.1641/B580801

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 Periodical postage paid at Washington, DC, and additional mailing offices.

POSTMASTER: Send address changes to *BioScience* Circulation, AIBS, 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101. Printed in USA.

BioScience

Organisms from Molecules to the Environment

American Institute of Biological Sciences

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In 1974, Thomas Nagel famously grabbed the attention of philosophers by asking, "What is it like to be a bat?" In the article starting on p. 737, Gerald Kerth finally provides some answers. The answers are probably more complicated than Nagel envisaged.

Nagel was pondering whether we could ever provide an objective account of a subjective experience. The question still resonates, but biologists as well as philosophers have clarified some relevant matters over the past three-and-a-half decades. In particular, biologists have revealed previously uncharted complexity in the social relationships of many animals, especially mammals. The challenge of managing these fraught interdependencies is now widely thought to have been a key driver of the evolution of the mammalian neocortex. *Homo sapiens* boasts the most notable exemplar of that feature, and typically manages more and more complicated relationships with conspecifics than do other animals. So it is not surprising that gauging the likely behavior of others and calibrating our own against it can occupy much of our mental space. An answer to the question "What is it like to be a human?" would include a lot about dealing with other people.

Nagel contemplated a bat because humans have no subjective experience of a bat's sonar. Yet many bats, like humans, live in a social world. Kerth notes that bats have been seen exhibiting striking cooperative behaviors, with regurgitation of blood in vampire bats the best known example, though not the only one. Allogrooming has been seen in several species, and colony members will often transfer information about food. And bats may have issues with conspecifics too: they sometimes exhibit aggression toward members of foreign colonies. Yet they are able to make group decisions, a process that Kerth expects future studies will elucidate.

Further insights into the mechanisms underlying the complex social world of a bat may come from studies that assess kinship in colonies. Because bat colonies have a genetic structure that varies between and within species, studies using the techniques of modern genetics promise to shine a searchlight on another recurring question, that of the role of kin selection in shaping social behavior. Many biologists will breathe a sigh of relief when consensus is reached on that pivotal question.

Bats are far from the only species that will illuminate that question: insects will too, and on p. 691, Michel Cusson explains how a variety of modern molecular techniques are revealing more about how insects work. Cusson concentrates on ways in which these techniques can find weaknesses that will allow humans to control problem insects—pests—but DNA-based techniques are also attacking the mystery of how eusociality evolved. The mental life of insects, which lack anything like a neocortex, is even harder to imagine than that of a bat, but no biologist can deny the interest in understanding what led to the cooperation they exhibit. Answers to the question of how sociality evolved in bats and other species are, of course, not those Nagel was seeking. But they might usefully expand his question.

TIMOTHY M. BEARDSLEY
Editor in Chief

doi:10.1641/B580801
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