



## INTRODUCTION

# Living in Societies

AN AWARENESS OF ONE'S POSITION AND THE RELATIONSHIPS OF OTHERS IN A group is a rarity among vertebrate species, yet it has proved so spectacularly influential in just one species—our own—that it has become a major factor in determining the ecology of an entire planet. Although we can describe behavior patterns and speculate about their evolutionary advantage, we also need to understand their contribution to a species' reproductive success. A new wave of research is investigating the primate social brain within this evolutionary context, often through studies of wild primates.

This special issue of *Science* explores the adaptive advantages of group life and the accompanying development of social skills. *Science's* Greg Miller visited a chimpanzee sanctuary in Uganda to examine how researchers take advantage of these semiwild habitats to explore the cognitive abilities of our primate cousins (p. 1338). Just how valuable these opportunities can be is illustrated by the massive experimental study of physical and social cognition described by Herrmann *et al.* (p. 1360). Silk (p. 1347) describes how research on sociality in baboons and other Old World monkeys is beginning to reveal the long-term relationship between social bonds and the fitness of individuals. In their book *Baboon Metaphysics*, reviewed by Jolly (p. 1326), Cheney and Seyfarth further illustrate the value of field studies.

One of the most striking evolutionary trends among primates has been the expansion of brain size. Many competing theories have been invoked to explain this physiologically costly size shift. Dunbar and Shultz (p. 1344) review the evidence suggesting that it is the computational requirements of the special social lives of primates, in particular the requirement for pair bonding, that have driven the evolution of the human brain. An expanded capacity gives human beings unique cognitive skills, yet our primate cousins are quite capable of discriminating between necessary and superfluous actions, as described by Wood *et al.* (p. 1402). Our brains give us extraordinary powers of imagination and sophisticated cultural adaptation; for instance, humans can undertake mental time travel and anticipate the consequences of actions. Gilbert and Wilson (p. 1351) review the psychology and neuroscience of prospection; that is, how we predict future emotional experiences and how thinking about the future in the present can lead us astray. One of the most recent manifestations of our social brains has been the imaginative leap taken into the construction of virtual worlds. Our reporter Greg Miller undertook another field trip, this time to Second Life, and describes the progress researchers are making in using and understanding this new dimension of the human social experience (p. 1341).

It will be fascinating to learn how humans will cope with our increasingly virtual societies. We can only hope that our growing evolutionary insight into social behavior will help us to distinguish reasonable expectations of human society from those that are implausible.

—CAROLINE ASH, GILBERT CHIN, ELIZABETH PENNISI, ANDREW SUGDEN

## Social Cognition

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