The evolution of human language is one of the great remaining problems of modern science. For decades, it has stubbornly resisted proper empirical analysis and significant progress has only been made in recent years. Language is based on a plethora of behavioural and neurological adaptations, which most likely have their own independent evolutionary histories. In recent years, comparative studies of natural communication in nonhuman primates, both vocal and gestural, have come to play an important role in addressing some of these phenomena, by providing a better understanding of the diverse phylogenetic roots of a uniquely human behaviour.

The goal of my contribution is to provide an update on the empirical research on primate vocal communication in natural circumstances, with the purpose of making comparisons with some of the physical and behavioural adaptations underlying human language, their likely origins in the primate lineage, and their functional role. The focus will be on the mechanisms with which living nonhuman primates produce and perceive vocalisations, as well as the possible underlying cognitive processes. Of particular interest are phonetics (vocal repertoire, physical sounds), phonology (psychologically distinctive sound units), semantics (meaning of sound units), morphosyntax (patterns underlying sound combinations), and pragmatics (relation between sound units, users, and context). Progress has been made in each of these components and I will highlight some key findings.

Most of the research reviewed has been conducted in the wild, at field sites where primates can be studied under natural conditions with observational sampling techniques and non-invasive field playback experiments that replicate natural situations. Relevant field data have been collected in the Taï National Park, Ivory Coast, the Budongo Forest Reserve, Uganda, Khao Yai National Park, Thailand, and Gashaka Gumti National Park, Nigeria, by a variety of researchers. Additional
experimental work has been conducted in captivity at Edinburgh Zoo, Scotland, Twycross Zoo, England, the Lola ya Bonobo sanctuary, DR Congo, and the Station Biologique in Paimpont, France. To allow phylogenetic comparisons and conclusions, all studies have been conducted with a broad range of monkey and ape species, including bonobos, chimpanzees, white-handed gibbons, guereza colobus monkeys, King colobus monkeys, blue monkeys, Diana monkeys, Campbell’s monkeys, and putty-nosed monkeys.

The emerging picture of this research programme is that there is considerable variation in the details of the communication systems of the different species of non-human primates with only very basic phylogenetic trends. At a broader functional level, however, numerous parallels and possible pre-adaptations are visible in almost all species when compared with human communication, suggesting that during their more recent evolutionary history only minor adjustments were necessary to endow humans with the current language faculty.

Further reading

