Monkeys with a Knack for Language

Macaques process complex sequences of syllables in a manner similar to babies

Even babies have a sense of grammar: three-month-old infants already recognize the rules for combining syllables and notice when a rule is violated. Scientists at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig have now discovered that macaques also possess at least the rudiments of this ability. The researchers measured electrical brain activity on the scalp of macaques while the animals listened to meaningless but rule-compliant strings of syllables. They discovered that the electrical activity pattern of the animals’ brain is similar to that of a three-month-old baby. They could also tell from the macaques’ brain patterns that the animals notice when a syllable string is incorrect. This ability must therefore have arisen before the human evolutionary line split off from that of other primates. However, even humans lose this ability as adults: they no longer recognize language patterns by merely listening, like babies or macaques, and have to actively search for the rules.

In many languages, syllables follow specific rules. In English, for example, the initial syllables “he” and “she” are followed – at variable distances – by an “s”, whereas “I” and “you” aren’t. Macaques and three-month-old babies recognize these rules, though the monkeys learn them more slowly than humans.