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The Octopus: Implications for Cognitive Science

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Abstract

Octopuses challenge many common assumptions and received views about the relationship between the nervous system, cognition, and the mind. Despite the major anatomical and functional differences between the octopus and vertebrate neurocognitive systems—as well as the divergent evolutionary histories of these clades—octopuses have vertebrate-like cognitive and behavioural capacities and even display aspects of putative “mentality” previously thought to be applicable (if at all) only to vertebrates. Octopuses thus raise significant implications for scientific and philosophical studies of the mind, brain, and cognition, e.g., regarding the mechanisms and substrates of cognition, the functions and structure of consciousness, and the implementation of various cognitive routines. Furthermore, the evolutionary and ecological factors that influenced the development of octopus cognition and behaviour warrant a reexamination of presuppositions about how intelligence arises. This presentation provides an overview of some of the implications octopuses raise for cognitive science.