

UNDERSTANDING TOOL USE IN ORANGUTANS

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The ability to use tools has been suggested to indicate advanced physical cognition in animals. But how does that relate to the limited number of wild orangutan populations in which tool use has been observed? Here, we summarize the results of a 7 years study on wild Sumatran orangutans in the swamp forest of Suaq Balimbing, including 300 tool-use events. We provide evidence suggestive of flexible tool use and an understanding of affordances and action-object relations within this population by showing that the orangutans adjust their tool behaviors to the specific tool-use contexts (mainly seed-extraction versus tree-hole tool use). This form-function fit could be illustrated by the differences we found in 1) the reliance on environmental feedback; 2) the selectivity in tool choice; and 3) tool characteristics, related to the specific feeding contexts. This cognitive complexity is further illustrated by age differences suggestive of learning: immature orangutans make more tools in shorter tool sessions, which they manipulate more often and with lower feeding success than older individuals. Tool-use stability within this population over time as well as active information transfer suggests that this learning is socially mediated, which explains the geographical variation observed between populations better than possible genetic and ecological differences. We conclude that orangutan tool use is flexible, learned (mainly socially) and cultural, just like many other skills, which has implications for how we think about the development and evolution of (orangutan) intelligence.

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