

## LOCAL TRADITIONS IN GORILLA MANUAL SKILL: EVIDENCE FOR OBSERVATIONAL LEARNING OF BEHAVIOURAL ORGANIZATION

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Elaborate manual skills of food processing are known in several species of great ape; but their manner of acquisition is controversial. Local, 'cultural' traditions show the influence of social learning, but it is uncertain whether this includes the ability to imitate the 'program-level' organization of behaviour. Dispute has centred on whether program-level imitation contributes to the acquisition of feeding techniques in mountain gorillas in Rwanda. If, as has been reported, western gorillas in European zoos spontaneously use these same techniques when given similar plants, imitation is unnecessary; however, we find these reports unconvincing. Here we show that captive gorillas at Port Lympne, Kent, have developed a group-wide style of feeding on nettles, using two techniques; neither matches that described in wild gorillas. When processing nettles, both populations are similar in their repertoires of actions, multi-stage techniques, ability to coordinate asymmetric actions of the hands, and in using parts of a process as 'iterated subroutines'. Crucially, however, Rwandan and Kentish techniques carry out different processes, using different organizations of actions. We conclude that, while an elaborate repertoire of manual actions and the ability to develop complex skills are natural characteristics of gorillas, the inter-site differences in nettle-eating technique are maintained by social transmission. Gorillas can copy aspects of program organization from the behaviour of others and they use this ability when learning how to eat nettles, resulting in stable, customary styles of processing at different sites. Like other great apes, gorillas have the precursor abilities for developing culture.

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