

CHIMPANZEES CHOICE OF HAMMER WEIGHT IS BASED ON AN AVOIDANCE TO SMASH THE KERNEL

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Chimpanzees in several communities in West Africa are known to crack open nuts by the use of hammer and anvil. In nut cracking the weight of the hammer is certainly a key factor determining success; in general, the greater the weight the fewer strikes are required to open the hard shelled nut. We present the results of an experiment with six captive chimpanzees investigating whether chimpanzees confronted with three artificial hammers differing only in weight would be able to associate the weight of the different tools with their effectiveness. While showing no initial preference for any of the hammers, one subject learned to select the heaviest tool on his first choice significantly more often than would be expected by chance. Surprisingly, two subjects developed a preference for the lightest tool. Detailed analysis of the state of the kernel in relation to the used tool revealed, that the kernel was more often intact after the use of the lightest tool. In addition, the probability that the kernel is smashed was highest when subjects were using the heaviest tool. Our results show, that when weight is the only discriminative feature, chimpanzees are able to select hammers according to their relative effectiveness. Furthermore, chimpanzees' choice of hammer weight is influenced by the intention to leave the kernel intact.

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