

CHIMPANZEES EXTRACT SOCIAL INFORMATION FROM AGONISTIC SCREAMS

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Previous research has demonstrated that chimpanzee agonistic screams are graded vocal signals that are produced in a context-specific manner: victim and aggressor screams are distinct scream variants, but the listener comprehension of these calls has not previously been examined. We investigated whether listening chimpanzees were capable of extracting social information from these calls. Using playback experiments, we broadcast congruent and incongruent sequences of agonistic calls to subjects. Incongruent sequences (low-ranking aggressor scream then high-ranking victim scream) represented an interaction that violated the social dominance hierarchy. We made these scream sequences congruent with the addition of a display pant hoot from a dominant male that outranked both screaming individuals. The congruent sequence therefore represented an interaction in line with the social hierarchy (dominant male caused high-ranking scream). If individuals were processing the meaning of the calls, they should attend more to the surprising incongruent sequence. In contrast, if individuals were simply attending to the most acoustically salient stimulus they should attend more to the congruent sequence. Ten captive adult chimpanzees were presented individually with both sequences of calls and we measured looking time towards the speaker. Subjects looked significantly longer at the incongruent sequences, despite them being acoustically less salient than the congruent ones. This indicated that chimpanzees processed the meaning of the calls and distinguished between graded victim and aggressor screams. We conclude chimpanzees combined information extracted from calls with social knowledge to form inferences about third-party interactions that they could not see.

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