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Abstracts

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Using tools influences the association networks of bearded capuchin monkeys (Sapajus libidinosus)

Research on tool use by non-human primates has advanced our understanding of how traditions might affect biological processes. Previous studies demonstrated how nut-cracking with stone tools affect cognitive processes such as perception, attention, memory, and learning of bearded capuchin monkeys from Fazenda Boa Vista, Brazil. In this contribution, we investigated whether the social network of these monkeys while cracking nuts with tools differ compared to their social network in other contexts. We used spatial association data collected over five field collection periods to construct association networks according to the activity monkeys were performing (nut-cracking, foraging for other types of food, or non-feeding activities) and the location (on an anvil or off anvils). We compared network and node metrics among the six contexts. We demonstrate that tool use influences the properties of association networks of bearded capuchin monkeys: connectivity was lower when monkeys were on an anvil and when they were cracking/eating nuts. There was no effect of age class on node properties, and no preferential pattern of association with the same or with different age classes while cracking nuts. The features of the nut-cracking networks of bearded capuchin monkeys are not optimal for information flow, which highlights the importance of artifacts, and of individual learning for acquisition of tool use. Our results provide evidence that socially transmitted behaviors persist despite theoretically diminished opportunities for social transmission of relevant information.