Do Squirrel Monkeys Cooperate?

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Introduction

Humans respond negatively to inequity, or receiving less than a partner for an equal amount of work. Although the evolutionary function of this behavior is unknown, one hypothesis is that these negative reactions evolved as a means to compare one's own effort and payoff with that of a partner, stabilizing long-term cooperation. Supporting this, negative responses to inequity have been observed in several nonhuman primate species (*Pan troglodytes*, *Pan paniscus*, *Cebus apella*), all of which are cooperative. Recent evidence suggests that squirrel monkeys also respond to inequity. However, there is little evidence that squirrel monkeys' cooperate in the wild and no study has examined this under experimental conditions. Thus, we examine the presence of, and relationship between, cooperative behavior and inequity response in captive squirrel monkeys.

Methods

We tested 6 same-sex squirrel monkey (*Saimiri boliviensis* and *Saimiri peruviensis*) dyads (3 male/male and 3 female/female) using a cooperative, counterweighted bar-pull task. In order access rewards, the monkeys needed to coordinate their actions to pull in a counterweighted tray. Conditions varied depending upon the equitability and distribution of rewards. In the cooperative clumped conditions, only one side of the tray was baited with two rewards, of either high or low value. In the mutual conditions, each tray was baited with one reward (both of which were either of high or low value). In the unequal condition, these two rewards differed in value (one was low and the other high).

Results & Discussion

Squirrel monkeys coordination on the task differed depending on the value and distribution of rewards ($\chi 2=19.395$, df=4, p=0.001). Subjects were more likely to coordinate their actions in the presence of a high value reward regardless of equitability (e.g. Unequal vs. Mutual Low, Z= -2.2, p=0.028). Moreover, subjects were equally likely to coordinate when rewards were dispersed as when they were clumped, suggesting that squirrel monkeys are not sensitive to the distribution of the rewards (Clumped High vs. Mutual High, Z=-.105, p=0.916). Thus, squirrel monkeys were not sensitive to the equitability or the distribution of the rewards; rather, they appeared to be motivated by the absolute value of the rewards.