Social Interaction Under Predation Experiment

Subjects: Cotton-top tamarins (SH, EN, SP, JM, LS)

Goal: The goal of this experiment is to study possible audience effects in cotton-top tamarins during predation. By presenting a predator to tamarins in a social situation, we can see the effects of an audience on a subject's reaction. We have documented each subject's alarm response to the same hawk when alone, so we can compare solitary and social behavior to get a sense of an audience effect, if there is one. The experiment will control for specific relationships between individuals. Though all individuals are unrelated, some pairs are cagemates, some are same sex, and some are opposite sex. By looking at each subject's alarm response in the presence of another individual, we can discern how this specific relationship affects alarm response. Similar experiments have been run with chickens. Chickens give significantly more alarm calls when in a social situation than when alone, and the type of relationship between the two individuals further changes the number of calls. For example, male chickens will alarm call more in the presence of their mate than in the presence of another male (Karakashian, Gyger, and Marler, 1988). Do tamarins feel an obligation to warn some individuals but not others? Does gender play a role? For what reasons would a tamarin alarm call more in the presence of one individual but not in the presence of another?

Procedure: This experiment is similar in its construction to the naïve tamarin presentation experiment except for a few key differences. The subjects are run in pairs rather than alone. Each of the pair relationships falls into one of three categories: cagemate, non-cagemate of the same sex, and non-cagemate of the opposite sex. Each subject will be run each of these relationships, and the subject side will vary randomly. The looming and control presentations will be eliminated. Instead, the goshawk will be presented every trial. Alarm responses will be coded for duration of alarm, alarm frequency and intensity, delay of alarm once the predator is in sight, and general movement within the cage.

References:

Karakashian, S., Gyger, M., and Marler, P. 1988. Audience effects on alarm calling in chickens (Gallus gallus). *Journal of Comparative Psychology,* 102(2), 129-135.