Vigilance and Collective Detection of Predators in Degus (Octodon Degus)

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Abstract

Individuals of social and partially social species typically reduce their vigilance activity when foraging in groups. As a result, per capita risk of predation decreases and individuals allocate more time to foraging and other fitness rewarding activities. Reduction of per capita risk is hypothesized to occur because there are more individuals to detect potential predators. If so, collective (i.e. total) vigilance is expected to increase with foraging group size. Increased surveillance during group foraging may occur if group members scan independently of one another, or sequentially to avoid the overlapping of their vigilance bouts. Intriguingly, such coordinated vigilance assumes that individuals monitor not only the presence, but the vigilance behaviour of group mates. We used seasonal records on time budget and grouping patterns of individually marked degus (*Octodon degus*), a social rodent, to examine if (a) individual vigilance decreases and/or foraging increases with group size, (b) collective vigilance increases with group size and (c) foraging degus coordinate their vigilance. When foraging, degus decreased their individual vigilance and increased their foraging time when in larger groups. Despite this, degus in larger groups increased their collective vigilance, supporting the hypothesis that socially foraging degus decrease predation risk through an improved ability to detect and escape potential predators. Additionally, patterns of collective vigilance suggested that degus scan independently of each other and so, they do not coordinate their vigilance to prevent its temporal overlapping. This finding does not support that foraging degus monitor the vigilance activity of group mates.