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MALE SCARCITY: HOW DOES THE NUMBER OF MALES IN A GROUP INFLUENCE SPIDER MONKEY SOCIETY?

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Spider monkeys (genus *Ateles*) live in fission-fusion societies in which females, rather than males, generally disperse from their natal group. Males in a group are expected to be more closely related to one another than are females, and, in keeping with kin selection theory, seem to cooperate in territory and mate defense against neighboring groups rather than competing with one another for matings. This "male-bonded" strategy manifests itself in ranging behavior, including more frequent male use of boundaries and patrolling, and in social behavior, as most studies report higher male-male associations, gregariousness, and higher rates of affiliative behaviors between males. However, a low number of males in a group may limit the effectiveness of cooperative mate and territory defense, in turn influencing patterns of male-bonded behavior. In this study, we utilized behavioral data collected at several spider monkey study sites (n=5) with a variable number of males (range: 5-20) to examine the relationship between the number of males in a group and various aspects of ranging and social behavior, including range size, boundary length, male and female use of boundary areas, rate of inter-group disputes, and male and female association patterns. This study suggests that while the number of males influences the expression of some male-bonded behaviors, other factors (e.g., ecological conditions, anthropogenic disturbance) also play an important role in structuring social relationships and ranging patterns in spider monkey groups. This study highlights the potential for flexibility in fission-fusion societies in response to variable demographic and ecological conditions.

Keywords: *Ateles*, social relationships, ranging patterns, behavioral flexibility