

DO WILD GIBBONS USE GROOMING AS A COMMODITY? AN EXAMPLE OF ADAPTIVE SOCIAL BEHAVIOR

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Several societies of primate species have been characterized as a "marketplace" at which services are traded back and forth among individuals. Among non-human primates, social grooming might be used as a model to test predictions derived from the application of biological market theory. Specifically in species in which males do not show control over the other sex by using force, males are expected to exchange services with the opposite sex to ensure breeding opportunities, particularly when breeding opportunities are more likely to arise. We investigated a wild population of white-handed gibbons, *Hylobates lar*, from Khao Yai National Park, Thailand. In this population, adult females and males are co-dominant (in terms of aggressive interactions), pair living and multi-male groups coexist, and promiscuous mating with males belonging to the social group (i.e. both primary and secondary male) as well as neighboring ones are well established. Spanning over 2,760 hrs of observation time, data collection involved 12 groups (7 pair living and 5 multi-male) in which females exhibited different reproductive conditions (i.e. cycling, pregnant and lactating). Our results show that social grooming was clearly more common when females were in cycling stage comparing to when females were lactating or pregnant. Similarly, the number of copulations per day that took place between females and primary males was clearly larger when females were cycling. Males groomed females more than females groomed males, and females had more copulations with primary males (and gave them more grooming) on days during which they received more grooming from males. Although grooming for itself might be traded in a reciprocal manner for the direct benefits that grooming itself offers, males appear to bargain grooming for sex during the most likely females' fertile period as expected in the biological market theory.

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