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Citation	Zarin P. Machanda, Ian C. Gilby, Richard W. Wrangham. 2009. Long-term inter-sexual association patterns among wild chimpanzees. <i>American Journal of Physical Anthropology</i> 138(S48): 180.
Published Version	http://dx.doi.org/10.1002/ajpa.21030
Citable link	http://nrs.harvard.edu/urn-3:HUL.InstRepos:2797429
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Long-term inter-sexual association patterns among wild chimpanzees
Zarin P. Machanda, Ian C. Gilby, Richard W. Wrangham

Abstract:

The widely accepted socio-ecological model of primate sociality assumes that males and female chimpanzees do not exhibit differentiated social relationships. However, despite anecdotal evidence to the contrary, this assumption has never been explicitly tested. We used 14 years of data from the Kanyawara community in Kibale National Park, Uganda to describe inter-sexual association patterns among these chimpanzees. We calculated a composite index using temporal and spatial association data to characterize the relationships between data to characterize the relationships between 336 male-female dyads. We considered any dyad with a composite index greater than one standard deviation above the mean to be strongly associated. We found that: (1) while the majority of male-female dyads were not strongly associated, a subset of dyads showed greater than average association across several two-year time periods; (2) all but one of the maternal kin dyads (either mother-son or brother-sister) had differentiated relationships; and (3) the association preferences of some dyads remained consistent despite changes in the reproductive condition of the female over time. We used generalized linear models to determine the effect of reproductive state, rank and seasonality on patterning these long-term associations. Our finding that chimpanzees exhibit differentiated inter-sexual association patterns will have far-reaching effects on studies of other forms of male-female interaction such as aggression, and further our understanding of the evolution of human pair-bonding.