

Social networks, long-term associations and age-related sociability of wild giraffes

Kerryn D. Carter^a,  , Rachel Brand^b, John K. Carter^a, Bryan Shorrocks^c, Anne W. Goldizen^a

^a School of Biological Sciences, The University of Queensland, St Lucia, QLD, Australia

^b Giraffe Conservation Foundation, Eros, Namibia

^c Environment Department, University of York, Heslington, York, U.K.

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Highlights

- The giraffes' social network and patterns of association were stable over time.
- The mean path length between any two giraffes was less than two.
- Both sexes contributed equally to the network structure.
- Long-term relationships spanning 6 years occurred among females but not males.
- Female giraffes increased their sociability upon reaching adulthood.

Long-term studies of sociality in wild animals are rare, despite being critical for determining the benefits of social relationships and testing how long such relationships last and whether they change as individuals age. Knowledge about social relationships in animal species that exhibit fission–fusion dynamics can enhance our understanding of the evolution of close social bonds in humans, who also have a fission–fusion social system. We analysed the social network of wild giraffes, *Giraffa camelopardalis*, in Etosha National Park, Namibia, from 1102 records of group compositions, including 625 individually identified individuals, spanning 6 years. We found that giraffes, which exhibit fission–fusion sociality, formed a cohesive society with short path lengths across the network that may facilitate passive information sharing about resource availability. Male and female giraffes appeared to contribute equally to the network structure, based on similarities between the sexes for five network metrics. However, using lagged association rates, we found that long-term relationships spanning 6 years were evident among female giraffes, but not males, which may be explained by sex differences in ranging patterns and reproductive priorities. Five network metrics of females were compared between two adult age cohorts to investigate whether females' ages influenced sociability. As younger females reached adulthood, they associated with greater numbers of females and increased their network strength and social connectivity, perhaps because of dispersal. Our study reinforces the value of network analysis and long-term studies for examining the social systems of wild animals.

Keywords

association pattern; fission–fusion; *Giraffa camelopardalis*; giraffe; half-weight index; lagged association rate; sociality; social network analysis