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BABOON SOCIAL COMPLEXITY – A NETWORK APPROACH

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Although the term social complexity is widely used in studies of primate sociality, it remains largely without definition and is relatively poorly studied. Based on comparative network analysis, it has previously been suggested that high social complexity might be defined by a high level of network fragmentation and a low degree of network overlap between networks based on different behaviours. Here we use our database of baboon social behaviour (P. cynocephalus, Gashaka Gumti NP, Nigeria) to investigate baboon social networks overlap and fragmentation. Networks are based on a variety of different social behaviours (such as grooming, aggression, displacement, mounting, infant handling and presenting) and individual network parameters are compared across time (short-term versus long-term) and behaviours. Furthermore, we analyse to what degree sex, rank and age are predictors of individual network positions. We found that overall there is relatively little network fragmentation and a high degree of overlap between networks based on different behaviours (exception: mount network) suggestion a low degree of social complexity in olive baboons. Furthermore, individual network positions and social 'preferences' are very stable and maintained over long periods of time, as reflected by the similarity of short-term and long-term networks and strongly influenced by age, sex and rank. Our results not only provide new insights into baboon sociality but also demonstrate how network analysis can be used to further define social complexity in a comparative way. Implications for the social brain hypothesis and our understanding of social complexity in primate societies in general will be discussed.

Keywords: social networks, baboon, social complexity, Papio