



The links between social and microbial ecologies: insights from wild primates and meerkats

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Investigating the evolutionary and ecological underpinnings of sociality is critical for many reasons, including to understand the complex relationship between social and microbial ecologies. While infectious disease is a major cost of sociality, beneficial microbial sharing remains a core benefit. Among wild macaques in Asia overlapping with human settlements, and desert-dwelling meerkats in South Africa, my research investigates these contrasting effects. I evaluate the relative importance of animal sociality, as opposed to their exposure to anthropogenic factors and environmental changes, on microbial acquisition and communities. One aspect of this research combines social networks and epidemiological modelling, to track disease transmission and outbreak risk among macaque populations overlapping with human settlements in Asia. A second aspect tackles a more fundamental question: *are microbial communities naturally embedded within host social organisations?* Thus far, this research has shown that aspects of social organisation (macaque and meerkat group membership, kinship) strongly influence microbial communities, and the co-occurrence of many beneficial bacteria. Thus, my research offers fundamental insights into host-microbial coevolutionary/adaptive relationships. Future work would aim to at investigate the evolutionary origins of infection-coping social strategies (lethargy, social distancing, exclusion), and assessing human-wildlife interactions as Social-Ecological Systems that can be subjected to interventions that decrease conflict and increase coexistence.