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MITRANI DEPARTMENT OF DESERT ECOLOGY

The effects of environmental variability on animal behaviour

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Environmental variability has long been recognized as pivotal in shaping animal behaviour, cognition, and behavioural flexibility. In my PhD work, I explored these relationships at different scales and conditions. First, I examined how stable predictable conditions affect cognitive abilities in lizards by comparing the learning abilities of captive and wild-born individuals. The results support the hypothesis that experiencing predictable stable conditions, especially in early life stages, can have a long-lasting effect on animal cognition. Next, I tested how environmental variability within urban habitats shape animal behaviour. Looking past the traditional approach of quantifying urbanization levels, I explored the effects of urban changes over time (urban stability) on behavioural flexibility in house sparrows. Here too, I found that environmental variability can explains differences in behaviour among populations better than the level of urbanization. This suggests that integrating elements of environmental variability and predictability into urban studies can greatly advance our understanding of how urbanization affects wildlife. Finally, as urban stability can be measured and assessed at different scales and dimensions, I explored the effects of changes in human activity levels on animal activity in urban areas. Comparing wildlife sightings in and around urban areas prior to and during the COVID-19 pandemic restrictions, I found that only one species, out of five explored, was affected and ventured deeper into urban areas during the pandemic. Overall, my study reveals a complex link between environmental variability, behaviour, and species evolutionary and ecological history. Integrating these elements into urban ecology can help us better characterize and understand urban ecosystems.

This is Reut's final PhD seminar!