



**University of
Zurich** ^{UZH}

Department of Evolutionary Biology
and Environmental Studies

Master Vortrag / Master Thesis Presentation

*What do stimulus-specific alarm calls in meerkats, *Suricata suricatta*, refer to?*

Speaker:	Andrea Müller MSc talk
Date/Time:	Wednesday, 2019-02-20 16:15 to 17:15
Place:	Y25-G-11/UZH Irchel Winterthurerstr. 190; 8057 Zürich
Access:	only intern
Host:	Prof. Marta Manser

Abstract:

Predator-specific alarm calls convey in their acoustic structure information about the predator, evoking in the receivers specific escape responses that are adaptive to counter the different hunting strategies of the predators. Across species predators are categorized according to different perceptive cues such as their spatial location, size, form and behaviour. Meerkats, *Suricata suricatta*, have discrete alarm calls for aerial and for terrestrial predators, which they can flexibly control according to their social context. The perception and production specificity of such alarm calls have been thoroughly investigated, yet the underlying cognitive mechanisms are still poorly understood. It is still unknown whether stimulus-specific alarm calls (1) only denote the predator type or refer to other contextual aspects of the situation, such as (2) the level of danger experienced by the receivers, thus functioning as an instruction describing an appropriate response, or (3) to the situation of the caller, acting as an indicator of behavioural intention. To test these hypotheses, I recorded alarm calls of seven habituated meerkat groups living in the Kalahari Desert in South Africa during six months. The alarm calls were elicited by a martial eagle predator model over 42 sessions divided in two conditions: at the burrow when meerkats were next to shelter in a safe position and during foraging when most of the group was far from shelter. Among groups, the number of alarm calls produced varied considerably, however the relative proportion of each call type emitted did not. The ratio of stimulus-specific alarm calls versus generic alarm calls was higher for the first vocal response when the predator model was first spotted as compared to the rest of the session. Furthermore, stimulus specificity tended to be higher in the foraging compared to burrow sessions, but did not change significantly when the group was far compared to near shelter. These findings suggest that meerkat's alarm calls function to denote the predator type and are not affected by the distance to shelter of the caller or of the receivers. Future studies with revised experimental set ups will be needed to further explore if contextual information about the situation of the receivers might be encoded in other acoustic dimensions of alarm calls, such as in the urgency gradient or temporal features.

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