

## Neighbour or stranger?

### Testing the 'dear enemy effect' in the dart-poison frog *Allobates femoralis*.

**Herbert Gasser**

herbert.gasser@univie.ac.at

*PhD student*

*Advisor: Walter Hödl*

*Department of Integrative Zoology, University of Vienna, Austria*

Many territorial species respond less aggressively to familiar neighbours than to unfamiliar floating strangers based on individual differences in signals. This form of social recognition, termed neighbour-stranger discrimination (NSD) or dear enemy effect has been reported so far from four anuran species.

At the beginning of the rainy season, males of the Pan-Amazonian dart-poison frog *Allobates femoralis* establish multi-purpose territories on the forest floor for up to 3 months, which they advertise by calling from slightly elevated perches. The stable territorial system and the highly vocal male-male communication system make the species a valuable candidate for acoustically-mediated NSD.

A total of 44 playback experiments were performed with 22 territorial males at the study site Treviso (Pará, Brazil) from 23 February to 6 March 2008. We broadcasted the signals [= natural advertisement calls from adjacent neighbours (N) or from strangers (S)] to the focal male from two directions. We randomly attributed to each male the order from where the first experimental trial was performed (neighbour (N) or opposite (O) direction; **signal position effect**) as well as the signal order (N- or S-signal; **signal type effect**). During the 5 periods of an experimental trial we documented the following behavioural parameters of the focal male: the number of calls, the number of body orientations, the number of jumps and the approached distance toward the loudspeaker.

The analyses of 29 valid (= phonotactic approach displayed) experiments with 19 males showed no difference in the behavioural response of territorial males to the advertisement calls of neighbours and strangers, as well as in their response to the position where playback signals were broadcasted.

The results of the study will be discussed with regard to possible methodological shortcomings, as well as considering proximate and ultimate level hypotheses for why males of *A. femoralis* do not discriminate behaviourally between neighbours and strangers.