

The impact of an alien fish on alternative newt phenotypes: invader personality matters in a feeding context

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Amphibians are currently declining worldwide for many reasons. A major cause is the introduction of exotic fish in their natural habitat. Specifically, the goldfish (*Carassius auratus*) is the most introduced ornamental fish in Europe. Although it does not prey on adult newts, this fish has been associated with a strong decrease of newt populations. Moreover in the palmate newt (*Lissotriton helveticus*) alternative phenotypes can coexist in a same population: the paedomorphs that retain gills at the adult stage and the metamorphs that have undergone metamorphosis. These two phenotypes are differently affected by goldfish introduction: while metamorphs can persist with fish, the paedomorphs almost always disappear but the reasons of this differential sensibility are still unknown.

In this study we aimed to assess the effect of goldfish on foraging behaviour of both phenotypes in palmate newt. We also evaluated individual fish harassing behaviour towards newts to highlight the presence of fish personality and its impact on newt foraging.

To this end we assessed behavioural patterns of newts and fish in a replicated laboratory design using the focal sampling method. Goldfish were present in direct contact with newts in half of the 24 experimental tanks and the study covered the breeding period of newts.

Results showed that in the presence of fish fewer newts foraged than in the absence of fish. This effect was stronger in paedomorphs than in metamorphs. We also found that all fish did not behave in the same way: some fish revealed a stronger harassing personality than others. In contact with a more harassing fish, fewer newts came to eat.

This study showed the complexity of interactions between native and alien species in which not only the presence but also the particular personality of the invader can have ecological consequences.

Session 8- EVOLUTION 3 - BEHAVIOUR

Charles Jeuniaux room, 1st floor

Chair: Raeymaekers Joost

- 13:30-14:00 Does ecological complexity enhance or constrain the evolution of Darwin's finches?
Raeymaekers Joost A.M., De León Luis F., Chaves Jaime A., Sharpe Diana M. T., Huber Sarah, Herrel Anthony, Vanhooydonck Bieke, Koop Jennifer A.H., Knutie Sarah A., Le Bohec Celine, Clayton Dale H., Grant B. Rosemary, Grant Peter R., Podos Jeff and Hendry Andrew P.
- 14:00-14:15 The impact of an alien fish on alternative newt phenotypes: invader personality matters in a feeding context
**Winandy Laurane and Denoël Mathieu
- 14:15-14:30 Comparison of the behavioral patterns of a symbiotic and a predatory crab chemically detecting diseased Holothuroids
**Caulier Guillaume, Flammang Patrick, Gerbaux Pascal and Eeckhaut Igor
- 14:30-14:45 The evolution of reproductive decisions in a social environment
**Fokkema Rienk W., Ubels R. and Tinbergen Joost M.
- 14:45-15:00 Predatory behavior in *Podarcis muralis* (Lacertidae, Squamata): a model species for determining Linear Optical Trajectory?
**Maillard Aurélie, PlacideMarie-Ange, Ortiz Katia, Malvot Florian and Bels Vincent
- 15:00-15:15 Tool making and use by captive bonobos: functional & behavioral strategies
**Bardo Ameline, Borel Antony and Pouydebat Emmanuelle
- 15:15-15:30 Eco-behavioral adjustments of Balinese commensal macaques (*Macaca fascicularis*) to anthropogenic influences
**Brotcorne Fany, Fuentes Agustin, Wandia I Nengah, Beudels-Jamar Roseline and Huynen Marie-Claude

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