

# **Cannibalism in female *Allobates femoralis***

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When adult animals are confronted with unrelated young there are three options how they may react: adoption, ignoring, or killing. Adoption could decrease fitness, for example when a bird adopts and feeds a Cuckoo chick. Adoption could also increase fitness in species where females prefer males that already guard another clutch of eggs, as it is the case in many fishes. Killing unrelated young may increase individual fitness relative to others. This behavior is reported in several group living mammals like lions. By killing unrelated young, males may obtain enhanced mating opportunities, increased social status and/or reduce resource competition for their own offspring. By eating unrelated young they can even gain nutrients. Therefore, selective cannibalism of unrelated offspring may lead to significant gain in individual fitness. In the Neotropical poison frog *Allobates femoralis* males are highly territorial and terrestrial clutches are laid inside male territories. After hatching males transport tadpoles to widely dispersed water bodies. Previous experiments have shown that male frogs adopt any clutch inside their own territory, but cannibalize clutches when taking over a new territory, thereby reducing risks and costs of misdirected care. Cannibalistic behavior has previously been observed in other dendrobatid species mainly in females – in both wild and lab. For *A. femoralis* such information was so far absent. In the present study we investigated cannibalism of female *A. femoralis*, and tested under which conditions females prey on unrelated tadpoles under laboratory conditions. The varied parameters were the presence of a male, presence of an own clutch, and the spatial location of the female. Results show that cannibalism by females was highest when there was no male and no own clutch present. Both the presence of a male and the production of an own clutch reduced cannibalism, indicating that both male presence at a clutch and also hormonal changes due to ovulation may inhibit cannibalistic behavior in the females. These findings are of particular interest when discussing possible adaptive benefits of male territoriality and the evolution of paternal care.