

Title: Brooding modulates the call of a glass frog with male parental care

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In most animals, the costs of reproduction are higher for females than for males. Therefore, females should be the choosy sex and select males with preferred traits. In anurans, females are known to select males based on their body condition and body size. Moreover, as male parental care is quite common in frogs, females are also suggested to assess male parental performance and care quality. Whereas traits like body condition and body size can be reflected in call parameters, we don't know how females assess the parental state of a male. In certain glass frogs, males are the only caregivers and stay with the clutches until the tadpoles hatch. More importantly, females prefer caring males over males without clutches. Here, we investigated whether information on the care state is encoded in the call. To that end, we recorded 27 males with different care states and analysed their calls for differences in temporal and spectral call components. We found that males have significantly shorter calls and longer intervals between the calls when sitting and calling on top of the clutch (*brooding*) compared to males calling from next to the clutch and males without clutches. Therefore, only when a male that has clutches is simultaneously brooding and calling, then the call is modulated such that females could possibly deduce the parental state of this male. These results do not only give insights into female mate choice in species with male-only care, but more generally into mechanisms of acoustic intersexual selection in anurans.