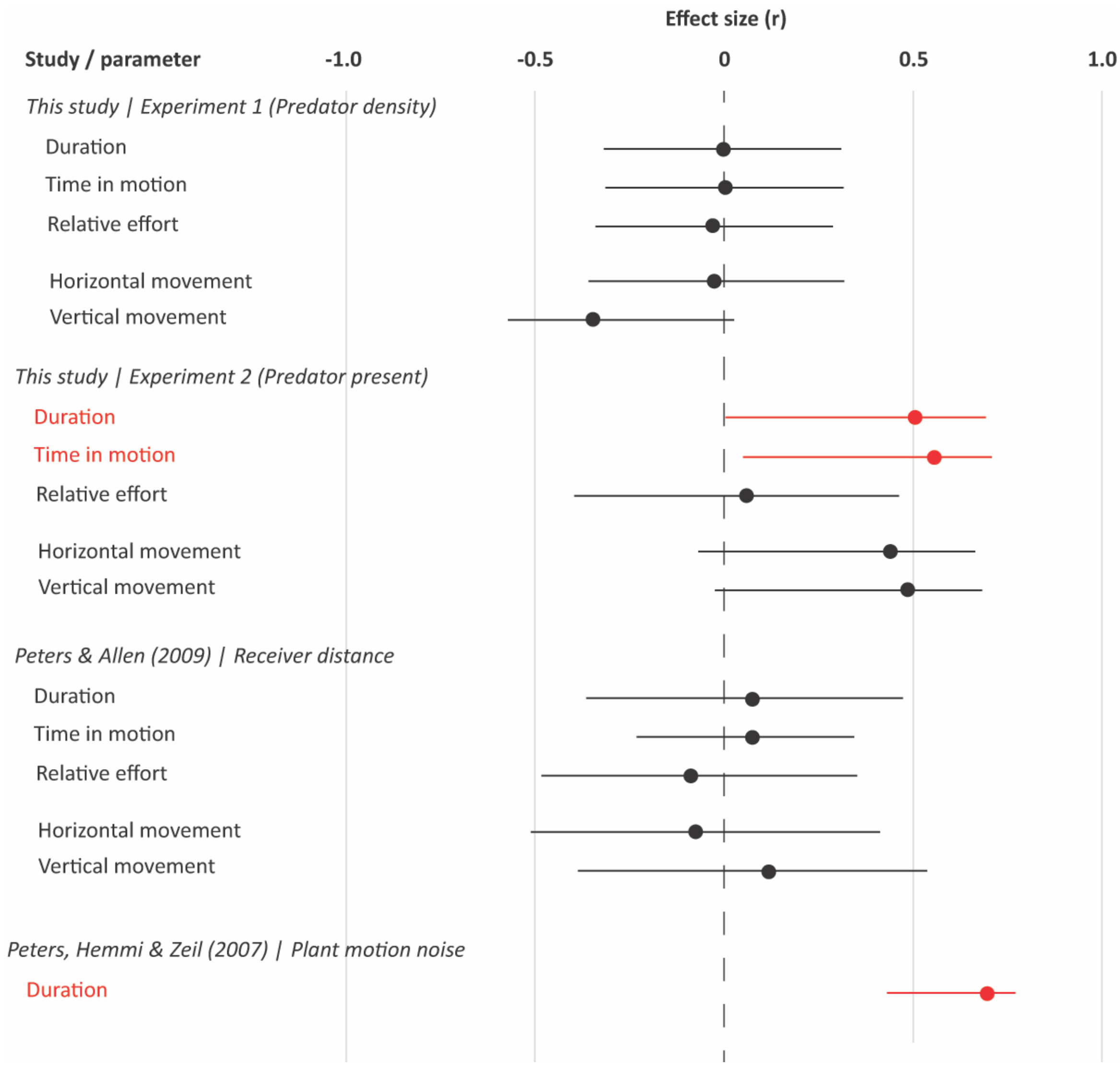


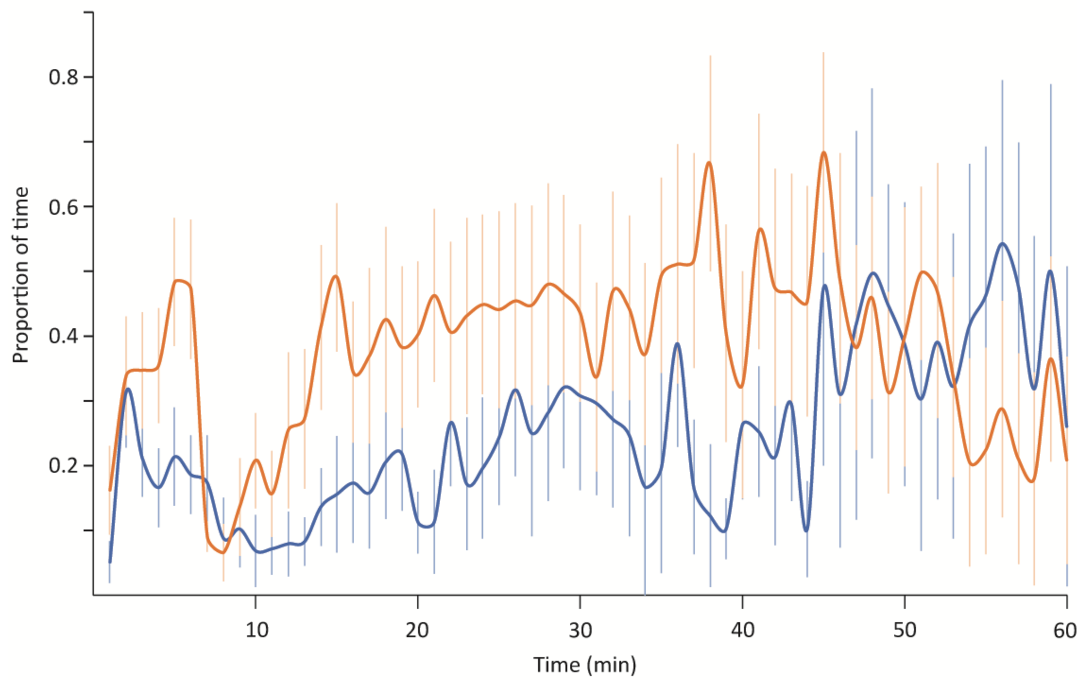
Figure S1 - Effect sizes for all statistical analyses in experiments 1 and 2, along with previous studies for comparison. The temporal and spatial parameters from the present study are shown. Also shown for comparison are effect sizes from two other studies that employed the same experimental design. The temporal and spatial parameters from Peters and Allen (2009), which investigated the effect of receiver distance on signaling, and tail flick duration from Peters, Hemmi and Zeil (2007), which examined signal manipulation in response to environmental plant motion. Effect sizes and associated 95% confidence intervals were computed for mixed models as per Nakagawa & Cuthill (2007), and values in which the confidence interval does not overlap zero are highlighted in red.

Nakagawa, S. and Cuthill, I.C. (2007). Effect size, confidence interval and statistical significance: a practical guide for biologists. Biological Reviews, *82*, 592-605.

Peters, R.A. and Allen, S.J. (2009). Movement signal choreography unaffected by receiver distance in the Australian Jacky lizard, Amphibolurus muricatus*.* Behav. Ecol. Sociobiol., *63*, 1593-1602.

Peters, R.A., Hemmi, J.M., and Zeil, J. (2007). Signaling against the wind: Modifying motion-signal structure in response to increased noise*.* Curr. Biol., *17*, 1231-1234.

(a)



(b)

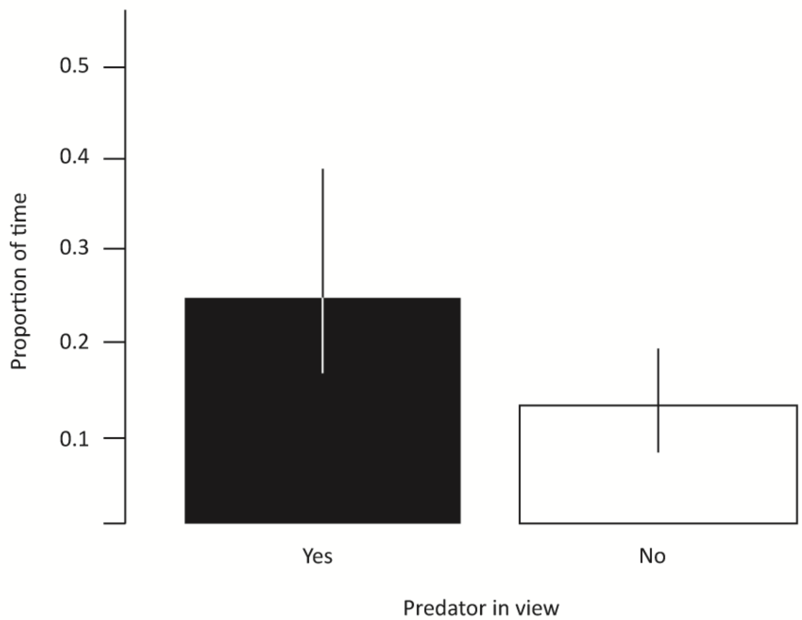


Figure S2 – Lizards kept their eye on the predator in Experiment 2. (a) Proportion of time in which lizards had their eye oriented up during sessions in which the predator was present (orange line) and absent (blue line). Error bars represent 95% confidence intervals (Note: variance increased toward the end of the 60 min period as sessions were terminated as soon as the lizard finished displaying and so fewer individuals contributed data in the latter half of the sessions). In general, the eye is oriented up a greater proportion of time in the predator present sessions except for a few minutes soon after the 5 min mark, which is when intruders were first visible to residents. The proportion of time with the eye up was equivalent in the last 20 minutes but at this point the birds head was no longer moving and lizards that did display had already done so (see Figure S4). (b) We compared the overall proportion of time with eye up for the predator present and absent trials using mixed models and found the eye to be up a significantly greater proportion of time in the predator present group ($F_{1,14} = 7.94$; $p = 0.014$).

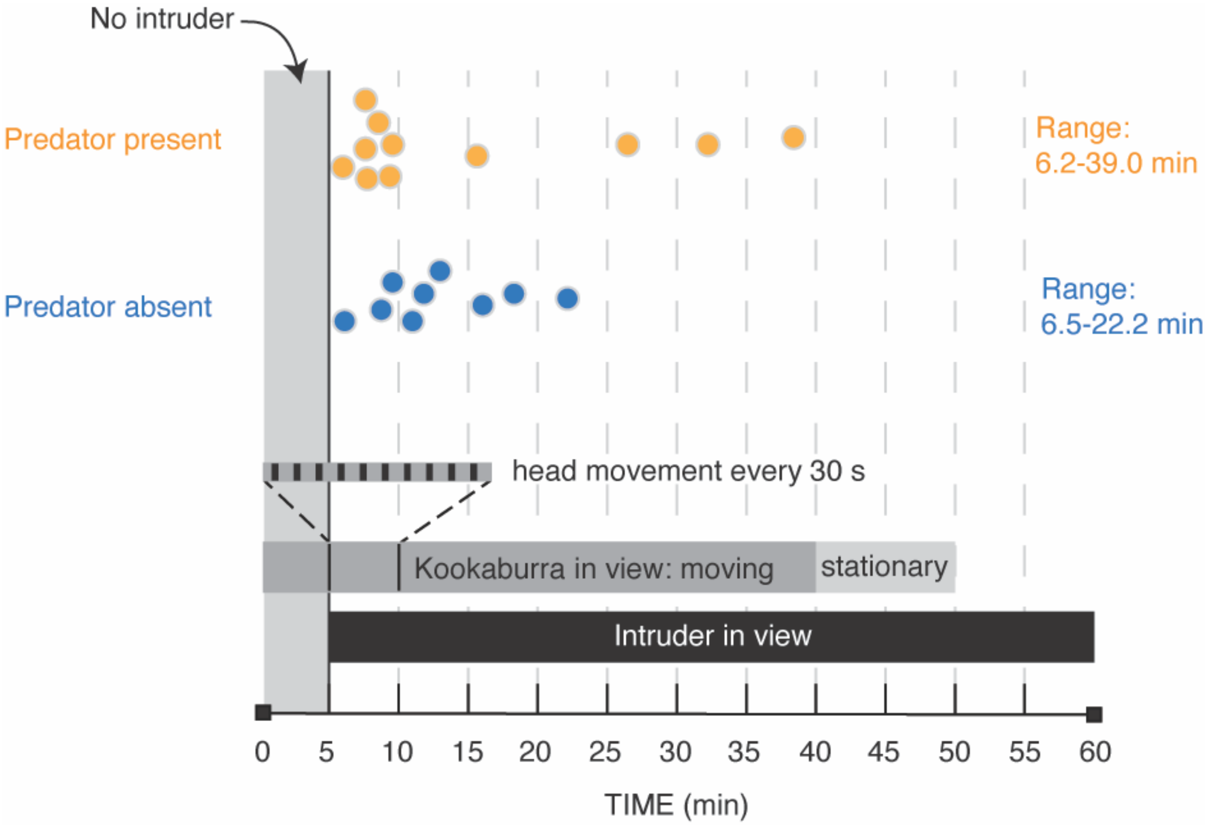


Figure S3 - Lizards responded only after the intruder was released in Experiment 2. Latency to first tail movement overlaid onto the illustration of our experimental design from Figure 1d. Individual response latencies are shown for the predator present (orange) and absent (blue) sessions. No responses were initiated prior to the release of the conspecific intruder.

Figure S4 - Tail flicking by *Amphibolurus muricatus* lizards does not compromise their ability to respond to predators. (a) Tail flicking ensures that the head and limbs are stationary while attempting to gain the attention of an intruder. The lizard's visual system is unaffected by self-motion and can detect salient visual cues, such as an approach or looming predator. The limbs are also ready to initiate movement away from any threat and into cover of vegetation if required. (b) Alternative motor patterns centre on repeated movement of the head that might affect the time required to detect approaching danger. In *A. muricatus* the rest of the display comprises push-up and whole body movements, while *Anolis sagrei* displays feature repeated head-bobbing movements. Lines represent movement of the eye over time for these two kinds of movements (display action pattern graphs - DAP). Unpublished data was used for *A. muricatus* while the DAP for *A. sagrei* was drawn from data presented in [13].