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Dear Editor,

Please consider our manuscript entitled “*Early environmental conditions do not impact behavioural flexibility in an invasive and non-invasive lizard species*” for publication in **Biology Letters**.

Behavioural flexibility – the ability of individuals to adjust behaviour adaptively in response to internal or external changes in the environment – has been shown to be important for animals adapting to and colonizing new environments. However, novel environmental conditions experienced during early development can also profoundly impact brain development and learning making the role of behavioural flexibility during the invasion process unclear. Robustness of flexible learning strategies to early environments, particularly temperature and stress, may provide a resolution to this perplexing problem but has not been tested before. Using a multi-species experimental approach, where we manipulate both early temperature and stress during development, we show that behavioural flexibility is indeed robust to early developmental environments in both an invasive and non-invasive lizard species. The lack of difference in reversal learning between these two species also points to behavioural flexibility being less important to the invasive process in these lizards compared to work in mammals and birds where it seems quite critical.

Our novel findings have broad implications for the fields of cognitive ecology and invasion biology, and we think they will stimulate new research paths into the role that developmental environments play on learning and cognition that are important in understanding the invasion process. As such, we think this is well suited for a general journal such as Biology Letters. We hope that you agree this is also the case.

We confirm that this manuscript has not been published elsewhere and is not currently under consideration for publication in any other journal. All authors have approved the manuscript for submission and declare no conflicts of interest.

Thank you for considering our manuscript for publication. We look forward to hearing from you.

Sincerely,

Pablo Recio Santiago

PhD Student

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