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Dear Editor,

The effect of target scarcity on visual foraging

We would be grateful if you would consider our Stage 1 Registered Report for publication in *Royal Society Open Science*.

In this manuscript, we are interested in better understanding how humans 'forage' for multiple targets sequentially in a scene. In particular, previous studies have investigated how target prevalence affects foraging behaviour, but have reached varied conclusions. In the proposed study, we will rigorously test whether participants show a preference for less common targets, in line with commodity theory and implicit value. Our primary hypothesis is highly tractable and therefore appropriate for a Registered Report format. As a secondary outcome, we will also use the Registered Report approach to rigorously test our recent state-of-the-art computational model of visual foraging on a novel dataset.

All necessary support for this project is in place: we have access to Departmental funding in order to pay participants, and we have the appropriate ethical approval for the experiment (University of Essex, application number ETH2223-1093). Thus, the study will be able to commence immediately upon receiving a provisional acceptance. Following stage 1 *in principle acceptance*, we agree to publicly register our approved protocol on the Open Science Framework prior to submission of the Stage 2 manuscript.

If the initial submission is accepted, we anticipate that we can complete the study and analysis within 6 months. We agree to share our raw data for all published results. We confirm that if we withdraw our paper after provisional acceptance, we agree to the journal publishing a short summary of the pre-registered study under a section *Withdrawn Registrations*.

Thank you very much in advance for considering our paper.

Yours sincerely,

Anna Hughes