Question	Hypothesis	Sampling plan	Analysis Plan	Rationale for deciding the sensitivity of the test for confirming or disconfirming the hypothesis	Interpretation given different outcomes	Theory that could be shown wrong by the outcomes
Do learning ability and dispersal relate?	Sex differences in learning ability are related to sex differences in dispersal.	Use colour-reward reinforcement data from three study sites in great-tailed grackles—a species undergoing rapid range expansion, where males disperse.	Bayesian experience weighted attraction (EWA) model; modelling the influence of sex on two parameters of grackles' colour-reward reinforcement learning: speed and sampling rate (where sampling is defined as switching between choice-options).	This method can* capture whether, and, if so, how multiple latent learning strategies simultaneously guide grackles' decision making—an analytical advantage over more traditional methods (e.g., comparing trials to passing criterion) that ignore the potential for equifinality. *We performed agent-based simulations to ensure our reasonable model-fit/effect detection *a priori*.	Hypothesis confirmed in full or in part: Males are speedier and sample less than females *because natural selection disfavours slow, error-prone learning strategies in range expansion.* Males are speedier than females *because natural selection disfavours slow learning strategies in range expansion.* Males sample less than females *because natural selection disfavours error-prone learning strategies in range expansion.* Hypothesis not confirmed: Males and females do not differ in their	N/A

					colour-reward reinforcement learning *because (not mutually exclusive) such sex-mediated differences never existed; too much time has passed since settlement and differences are no longer detectable as females 'catch up' (e.g., via assortative mating) and/or males 'lose' their learning 'edge' (e.g., via shifts in favourable post-establishment phenotypes) over successive breeding generations; our measure of learning ability does not capture this dynamic.* Females are faster and/or sample less than males *because (not mutually exclusive) natural selection disfavours slow, error-prone learning strategies in females as they provide the bulk of parental care; females have 'overtaken' (e.g., via shifts in favourable post-establishment*	

					phenotypes) males across successive breeding generations.	