A Bird's-Eye View of Numerical Discrimination in the Wild

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Abstract: Theory in numerical cognition has been in large part informed by evidence of numerical discrimination in humans and primates. Posited universal cognitive systems have, as a result, fundamentally been shaped by mammalian physiology and phylogeny, with findings largely supporting a ratio-based system. Explorations of large number discrimination with wild populations of any kind have, until now, been virtually unknown. Extant evidence on avian numerical capacity either focuses on large number discrimination in trained pigeons within a laboratory setting or object identification in terms of clutch size and brood parasitism in water fowl. Heretofore, no evidence has been uncovered to indicate the precise cognitive mechanisms that may be deployed in avian numerical choices of 'more' in a natural setting. Our study presents stark new evidence that redefines the capacities and limitations of number representation in the scatter-hoarding New Zealand robin (Petroica australis).