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TITLE: Evolutionary Models of Color Categorization

ABSTRACT: We study color categorization in artificial agent populations using methods from evolutionary game theory and mathematical psychology. We describe how the evolutionary game theory approach permits: (i) analysis of the forces contributing to the gradual evolution of human color categorization across cultures, and (ii) examination of the processes involved in an individual's learning and adoption of a culture's established color categorization system. We also discuss how variation in color perception across observers can influence categorization results, and whether variation in the genetic basis of color vision is expected to influence how human individuals and groups form categorization systems. Our results bear on categorization findings and theories from human perceptual psychology, cognitive psychology, cognitive anthropology, linguistics and human color vision.

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