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Why blueberries are blue: intuitions about color labels among congenitally blind and sighted adults

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Abstract

Why do we describe blueberries as blue as opposed to white (their inside color)? People might label object colors entirely according to what they see most frequently. We hypothesized instead that labeling takes into account typical viewing conditions (outside/daytime) and object causal history (colors relationship to function; Cohen, 2004). We further predicted that these intuitions develop independently of visual experience. Sighted (n=15) and congenitally blind (n=20) participants chose one of two color labels for novel objects, described as having different colors (or textures) on the inside/outside or during daylight/nighttime. On some day/night trials, objects had nighttime-intended functions. Sighted and blind individuals alike chose observer-centric outside and day colors by default, but switched to nighttime colors when objects had nighttime functions. First-person visual experience is not required for color-labeling to take into account observer characteristics and object causal history.