Agent's symmetry elicits egocentric transformations for spatial perspective-taking

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Abstract: Spatial perspective-taking is an ability to understand in which direction an object is located relative to an agent (e.g., another person or a chair). Previous studies showed that left/right judgments prompted an egocentric transformation strategy (i.e., mental rotation of the self) whereas front/behind judgments prompted other strategies (e.g., tracing a line of sight). To examine whether the symmetrical shape of an agent could affect the choice of strategies, we used as an agent a cuboid which has a prong on one of its sides. We labeled the prong side as the front (Experiment 1) or right (Experiment 2) of the agent, about which participants made left/right and front/behind judgments. The results revealed that egocentric transformations were more favored for judgments about directions along symmetrical than asymmetrical axes of the agent, regardless of whether the judgment was about left/right or front/behind. This suggests similar processing underlies left/right and front/behind judgments.