

Is deference to supernatural beings present in infancy?

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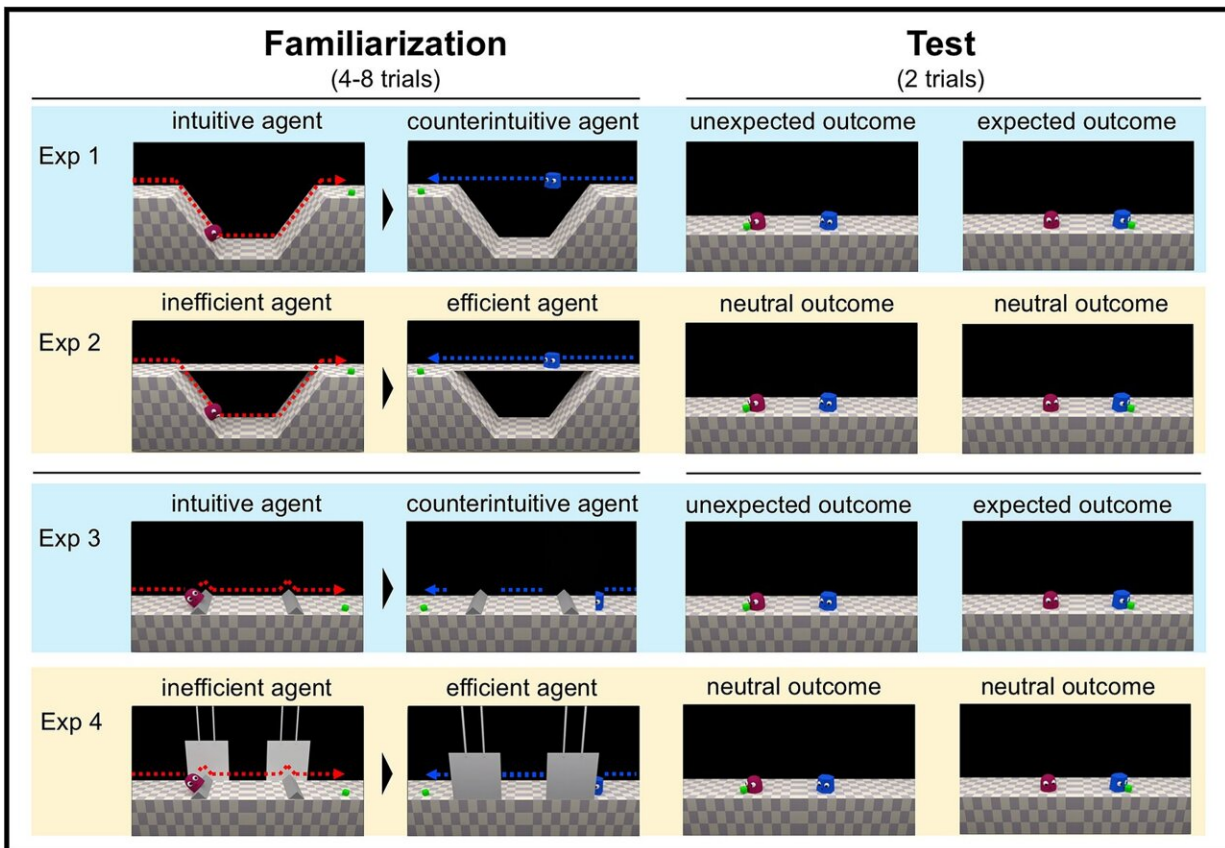


Figure 1 From: Preverbal infants expect agents exhibiting counterintuitive capacities to gain access to contested resources

From shamans and mystics to cult leaders and divine kings, why have people throughout history accorded high status to people believed to

have supernatural powers?

According to a study led by researchers from the University of Oxford, this tendency to attribute [social dominance](#) to such individuals is rooted in [early development](#).

As part of the study, 48 infants aged 12 to 16 months watched a series of animated videos in which two characters competed for a reward. In each scenario, one character displayed physically counterintuitive methods of making progress across the screen—flying or teleporting in the direction of the reward; the other moved more intuitively in continuous paths sticking to the ground, thus lacking any special powers.

The children generally found the events unexpected (they looked longer at the screen) when the character using physically intuitive methods of propulsion outcompeted the one employing physically counterintuitive methods, expecting the latter to 'win' instead. Further experimental manipulations showed that infants' expectations were not simply motivated by how efficiently goals were achieved, but whether supernatural capabilities were deployed in any given scenario.

Co-first author Dr. Xianwei Meng, of the Graduate School of Human Sciences at Osaka University, said: "Studies in developmental science have shown that from the first year of life infants are sensitive to both social dominance and to events violating intuitive understanding of the physical world. They expect characters who have relatively larger body-size, more allies, or who are located at a higher elevation to prevail in situations of conflict. They also expect objects to fall earthwards and move in continuous trajectories. Our experiments combined these existing procedural paradigms to show, for the first time, that observing an efficiently goal-directed event that violates intuitive principles of gravity and continuity triggers expectations of social dominance."

Co-first author Dr. Yo Nakawake, of the Kochi University of Technology and also research affiliate at the University of Oxford, added: "Further research is needed to explore the inferences made by young children with regard to other properties commonly attributed to supernatural agents such as shapeshifting, omniscience or immortality. We would also want to see how infants react to counterintuitive displays from individuals who are not competing for a reward, just to understand if a supernatural act alone elicits expectations of social dominance. One other important question that remains unanswered is whether infants perceive these otherworldly figures to not only be socially dominant, but also more knowledgeable, trustworthy, competent, or prosocial."

According to Professor Harvey Whitehouse, Director of the Centre for the Study of Social Cohesion (CSSC) at the University of Oxford and senior author on the paper: "Anthropologists have long been aware of the link between supernatural power and social dominance in cultures from all around the world. But this is the first time we have seen evidence for such a link at such an early stage in the socialization process, even before [language skills](#) are well developed, suggesting that it may be a natural consequence of the way human minds work."

"Preverbal infants expect agents exhibiting counterintuitive capacities to gain access to contested resources" is published in *Scientific Reports*.

More information: Xianwei Meng et al, Preverbal infants expect agents exhibiting counterintuitive capacities to gain access to contested resources, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-89821-0](https://doi.org/10.1038/s41598-021-89821-0)

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