



Society for Research in Child Development

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How Do Children Learn About Science and God?

Parents and teachers: take heed. It is through you that children learn about those things they cannot see. Things like the fact the earth is round, not flat; that our thinking and other mental processes occur in our brains; that germs exist and that there is a God. But they do more than just parrot back what you say to them. They take what you teach them and add their own interpretations based, in some instances, on just how that teaching occurs.

That's the conclusion of a literature review about how children learn about science and religion, published in the May/June issue of the journal, *Child Development*.

The review, by Paul L. Harris, PhD, professor of education at Harvard University, and Melissa A. Koenig, PhD, of the University of Chicago, enhances and challenges existing theories about how children learn, note two commentaries in the same journal. "The issues discussed by Harris and Koenig are crucial if we are to take seriously the importance of culture in cognitive development," says the author of one, Maureen A. Callanan, PhD, professor of psychology at the University of California, Santa Cruz.

Dr. Harris notes that the analysis reveals three key points about how children learn about objective and subjective nonobservable objects.

- Children extrapolate beyond what they're told and formulate more powerful interpretations of what they're told. So, for instance, if they learn the earth is round, they figure out that if they start out at one point and continue around the world, they end up back at the same point, even if no one explicitly told them they would.
- Children bring their own contributions to what they learn. So, for instance, if you tell them that the brain enables humans to think, they take that information to the next step and deduce that switching the brains of two people would also switch the individuals' personalities.
- Children appear to be more confident about the information they're given about scientific subjects they can't see, such as germs, than about spiritual subjects they can't see, such as God.

"We don't have a firm view on why it is they're a bit more confident on the scientific information," says Dr. Harris, "but one possible plausible reason is that when we talk about things like germs or body organs, we talk in a very matter-of-fact fashion. We don't say, 'I believe in germs,' we simply take it for granted that they exist." In talking about religion and other spiritual matters, however, adults tend to assert the existence of God more strenuously, possibly raising doubts in children's minds as to the existence of an unseen deity.

Cultural differences also likely play a role, he says, even socioeconomic differences that affect the way adults present information.

"It's intriguing to think that parents might talk differently to their children about science and spirituality, and I'd imagine there is a great deal of cultural variation in those discussions," says Dr. Callanan, "I look forward to seeing what future research reveals."

As a second commentary by Brian Bergstrom, PhD, Bianca Moehlmann, PhD and Pascal Boyer, PhD of the Department of Psychology at Washington University in St. Louis notes: "Harris and Koenig draw our attention to an aspect of cognitive development that is too often neglected: the need for children to rely extensively on culturally transmitted information while simultaneously erecting safeguards against misleading or deceptive input."

The authors of both commentaries, as well as Drs. Harris and Koenig, note that these new theories require new directions in research on children's cognition, including the extent to which children differentiate between the scientific and the spiritual realms.

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Summarized from Child Development, Vol. 77, Issue 3, *Trust in Testimony: How Children Learn about Science and Religion* by Harris PL (Harvard University) and Koenig MA (University of Chicago). Copyright 2006 The Society for Research in Child Development, Inc. All rights reserved.