

What does it mean to be alive?

April 28 2008

Understanding the concept of a “living thing” is a late developmental achievement. Early research by Jean Piaget, showed that kids attribute “life status” to things that move on their own (e.g. clouds or bikes) and even 10-year-olds have difficulty understanding the scope of a living thing.

New research, supported by the National Science Foundation and the National Institutes of Health, proposes that the way in which “alive” and other biological concepts are named within a given language shapes their understanding and acquisition in children.

Northwestern University psychologist Florencia Anggoro, with colleagues Sandra Waxman and Doug Medin, compared 4-9-year-old children speaking English and Indonesian, a pair of languages with an intriguing difference. In English, but not Indonesian, the name “animal” is polysemous, or has more than one meaning: one sense includes all animate objects (as in, the animal kingdom); the other excludes humans (as in, ‘don’t eat like an animal!’).

This polysemy, the researchers say, can make it difficult for children to identify with any precision the scope of the names and their underlying concepts. If this is the case, then children learning a language without this polysemy should have less difficulty. Indonesian provides an ideal test: the word “animal” is not ambiguous; it refers exclusively to non-human animals.

To test this theory in the laboratory, Anggoro, who is now at the

University of Chicago, and colleagues asked both Indonesian-speaking children and English-speaking children to identify entities that are “alive” in a simple sorting task. Indonesian-speaking children, tested in Jakarta, exhibited little trouble; they selected both plants and animals. But, English-speaking children, tested in Chicago, had trouble settling on the scope of the concept, and even at 9 years of age tended to exclude plants. Thus, the term “alive” poses unique interpretive challenges, especially for English-speaking children.

These results, which appear in the April issue of *Psychological Science*, a journal of the Association for Psychological Science, offer insights into how knowledge is shaped by language. The results also have strong implications for education, “understanding the conceptual consequences of language differences will serve as an effective tool in our efforts to advance the educational needs of children, including (but not limited to) those from diverse linguistic and cultural backgrounds who are now enrolled in U.S. schools” says Anggoro.

Source: Association for Psychological Science

Citation: What does it mean to be alive? (2008, April 28) retrieved 20 April 2024 from <https://medicalxpress.com/news/2008-04-alive.html>

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