



## Society for Research in Child Development

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#### **Babies Raised in Bilingual Homes Learn New Words Differently Than Infants Learning One Language**

Infants who are raised in bilingual homes learned two similar-sounding words in a laboratory task at a later age than babies who are raised in homes where only one language is spoken. This difference, which is thought to be advantageous for bilingual infants, appears to be due to the fact that bilingual babies need to devote their attention to the general associations between words and objects (often a word in each language) for a longer period, rather than focusing on detailed sound information. This finding suggests an important difference in the mechanics of how monolingual and bilingual babies learn language.

These findings are from new research conducted at the University of British Columbia and Ottawa. They appear in the September/October 2007 issue of the journal *Child Development*.

Immigration, official language policies, and changing cultural norms mean that many infants are being raised bilingually. Because nearly all experimental work in infant language development has focused on children who are monolingual, relatively little is known about the learning processes involved in acquiring two languages from birth.

The researchers sought to determine whether the demands of acquiring more sounds and words lead to differences in language development. An important part of language development is the ability to pay attention to native speech sounds to guide word learning. For example, English learners expect that the nonsense words “bih” and “dih” refer to different concepts because “b” and “d” are different consonant categories in English. By 17 months of age, monolingual English infants use native-language speech-sound differences to guide them as they learn words. Do bilingual infants show a similar developmental pattern?

The study revealed that bilingual infants follow a slightly different pattern. Researchers tested bilingual children ages 14, 17, and 20 months on their ability to associate two words that differed in a single consonant sound with two different objects. Experiment 1 included a heterogeneous sample of bilingual babies (i.e., those exposed to English and another language). Experiment 2 tested two homogeneous groups of bilingual infants (English-French and English-Chinese). In both experiments, infants were repeatedly presented with a crown-shaped object that was called “bih” and a molecule-shaped object called “dih.” They were then tested on their ability to notice a switch in an object’s name (for example, the molecule-shaped object being called “bih” instead of “dih”). In all of the groups, the bilingual infants failed to notice the minimal change in the object’s name until 20 months of age, whereas monolingual infants noticed the change at 17 months.

This later use of relevant language sounds (such as consonants) to direct word learning is due to the increased demands of learning two languages, the researchers suggest. Ignoring the consonant detail in

a new word may be an adaptive tool used by bilingual infants in learning new words. Outside the laboratory, there is little cost to overlooking some of the consonant detail in new words, as there are few similar-sounding words in infants' early vocabularies. By paying less attention to the detailed sound information in the word, bilingual infants can devote more cognitive resources to making the links between words and objects.

Extending this approach to word learning for a few months longer than monolinguals may help bilinguals "keep up" with their peers. Indeed, previous research has shown that bilinguals and monolinguals achieve language-learning milestones (such as speaking their first word) at similar ages and have vocabularies of similar sizes when words from both languages are taken into account.

"Through studies with bilingual infants, we can gain a deeper understanding of language development in all infants," according to Christopher T. Fennell, assistant professor of psychology at the University of Ottawa and the lead author of the study. "In addition, the findings emerging from such studies will have practical implications for parents who are raising their children in a bilingual environment by revealing how young bilinguals acquire language."

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Summarized from Child Development, Vol. 78, Issue 5, *Using Speech Sounds to Guide Word Learning: The Case of Bilingual Infants* by Fennell, CT (University of Ottawa), Byers-Heinlein, K, and Werker, JF (University of British Columbia). Copyright 2007 The Society for Research in Child Development, Inc. All rights reserved.