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Deaf Kids Raised Apart Create Similar Gestures Brain Might Process Words In Orderly Way

January 15, 1998 | By Ronald Kotulak, Tribune Staff Writer.

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Studies of eight deaf children in the U.S. and Taiwan show that even though they are raised worlds apart, they spontaneously develop a similar type of sign language.

University of Chicago psychology professor Susan Goldin-Meadow said the findings indicate that the brain, which is believed to have learned language about 2 million years ago, has an inherent capacity to communicate by processing nouns and verbs in an orderly way, whether it's through spoken language or sign language.

"This points to the resiliency of not just communication but communication that's structured," she said. Goldin-Meadow and Carolyn Mylander, project researcher in psychology, reported their findings in the British journal *Nature*.

They said deaf children in Taiwan and the U.S. who had no formal language training developed a system of gesturing that is similar. Neither of the children's communication systems reflected the structures of Mandarin Chinese or English.

"These kids could get away with producing signs in any order, or completely randomly, and they would be understood," she said. "What is surprising is that both sets of children produced the same type of structured communication."

The findings do not suggest that there is a universal language that perhaps could be used to unify all the world's languages, Goldin-Meadow said. It does imply that the brain has the capacity to organize the symbols of language in an orderly way.

The findings do not settle the controversy over whether language is hard-wired in the brain, like vision, or if it is a much more flexible capacity that the brain has mastered because it is so valuable to humans.

"The reason we have language is not just because our ancestors had language, it's because we have a bunch of people who want to communicate with one another," she said.

Communication is so important to the brain that it strives to create a system with some help from its surrounding world, Goldin-Meadow said.

"If a kid grew up without a person to communicate with, I doubt that structured communication would

happen," she said. "Structured language does need a friendly environment within which to grow, but it doesn't need a model."

Deaf children develop language by pointing to objects as they identify nouns. They then combine gestures for nouns with gestures for verbs, but the grammar they use is different than that used in English and Chinese.

The U. of C. study involved videotaping thousands of gestures of each deaf child.

Unlike language in which the verb comes before the noun, as in "hit boy," the deaf children put the noun first, "boy hit," but it had the same meaning as "hit boy."

The children also developed complex structures in which the grammar was reversed: One child produced a hand-clapping gesture, pointed to himself, then did a "twist" gesture, followed by a blowing gesture with his mouth.

The communication with his mother meant that he wanted her to twist open a jar containing a fluid for making bubbles, blow some bubbles so that he could break them by clapping his hands.

Learning that these kinds of gestures have meaning could help other deaf children as well as youngsters who have language problems, Goldin-Meadow said.

"These children are giving us evidence that they know something about the structure of language. They know something about how language works and we can build on that when we're trying to teach these children."

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