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AT RANDOM. ON LANGUAGE.

Hand gestures may expand, express unspoken thoughts

August 05, 2004 | By Nathan Bierma, Special to the Tribune.

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Next time you're having a conversation in a coffee shop or at the dinner table, grip the edge of the table with both hands and don't let go. Then try to keep talking.

It's hard to do. Your hands will quiver with the urge to leap into the air and embellish your words with gestures. Why are such seemingly trivial motions so important to the act of speaking?

"We tend to think of these movements as just hand waving," said Susan Goldin-Meadow, developmental psychology professor at the University of Chicago and author of "Hearing Gesture: How Our Hands Help Us Think" (Harvard University Press, \$29.95). "Not many people are aware that they convey something substantive."

As Goldin-Meadow's research has shown, hand gestures are anything but random waving. As she has found, gestures can expand upon what we say, providing important clues to unspoken thoughts and meanings.

Goldin-Meadow began her research as a graduate student, arguing in her dissertation that deaf children who are not learning a sign language can develop structured systems of gestures (her recent book on this topic is called "The Resilience of Language," (Psychology Press, \$53.95).

Since then, Goldin-Meadow has expanded her research to include speakers who can hear. Along with U. of C. colleague David McNeill, author of "Hand and Mind: What Gestures Reveal About Thought" (University of Chicago Press, \$48), she has advanced a neglected area of study: how gestures relate to speech.

Spontaneous movements

When combined with speech, gestures tend to be spontaneous rather than structured. But gestures do build upon what we say.

For example, a speaker may report going "up the stairs," but if she winds her finger in a spiral as she says it, she communicates that she ascended a spiral staircase. If you tell a tourist a restaurant is one mile down the street, he or she knows which direction to go only by the way you point.

As Goldin-Meadow writes in "Hearing Gesture," "To ignore gesture is to ignore part of the conversation."

Gestures can also reflect the brain's visual imagination in a way speech doesn't. For example, a speaker recalling a distant memory may throw his hand over his shoulder (or fling it forward) while saying, "That

was a long time ago." The gesture traces an imaginary timeline.

One man Goldin-Meadow interviewed used his hands to talk about a dispute between a father and son. As he talked, the man placed his hands a few inches apart, thumbs and index fingers extended, then rotated them in opposite directions as he said that the two points of view conflicted. He was giving a physical form to an abstract moral dilemma.

Gesture is so integral to speech that we use gestures even when talking on the phone or when the person we're talking to has her back turned. People who are blind from birth use gestures even though they've never seen them.

In his book "From Hand to Mouth: The Origins of Language" (Princeton University Press, \$39.95), psychologist Michael Corballis used Goldin-Meadow's research to argue that human speech evolved not from grunts but from gestures -- although Goldin-Meadow isn't convinced.

Mixed messages

One of the most interesting phenomena to Goldin-Meadow is how gestures and speech can convey different meanings.

A classic example occurs when an experimenter pours all of the water from a tall, narrow glass into a short, wide one, and asks a child observer if the amount of water has changed. Many children incorrectly say yes, citing the different heights of the containers. But some of these children, Goldin-Meadow observed, make two C-shapes with their hands around the wider glass, even though they are talking about its height.

These gestures suggest the children have the key to the correct answer -- the width of the container -- even though they get the question wrong. Such "mismatches," as Goldin-Meadow calls them, show up in numerous other problem-solving exercises, and reflect a child's openness to learning a new fact or task.

"We showed that children can express information with their hands that they don't express with their mouth," she said. "This shows a readiness to learn."

Adults produce mismatches, too, Goldin-Meadow has found. As she writes [in "Hearing Gesture"], "Gesture can reveal thoughts that we don't even know we have."

Since "Hearing Gesture" was published last year, Goldin-Meadow has begun to research whether instructing children to use gestures when they talk can help them learn.

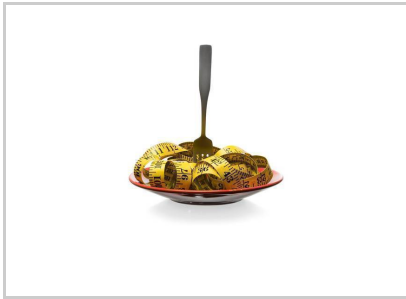
She says it's too early to tell, much less to recommend that teachers use and ask for more gestures in the classroom.

Still, her book was featured at the International Congress on Mathematical Education last month in Denmark.

"How to use this in the classroom is not clear to me," she said, noting that gestures may already be doing enough work on their own. "I don't want to muck up a system that seems to be working."

To comment on words and language, e-mail Nathan Bierma at onlanguage@gmail.com.

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