

Not All in the Mind

Heather Hill



Dr. Heather Hill, Prof. member DTAA, is currently developing her work as a trainer of dementia care staff using dance and embodiment as modes of learning. She is also involved in a program for families and children with disabilities called Dance Family. This career expansion follows her being a dance therapist for over 20 years, creating and teaching in a DMT course at RMIT, and then teaching at the Melbourne Institute for Experiential and Creative Arts Therapy (MIECAT). Heather is an author who has been published widely, and she has also conducted several research projects.

The work of Laban offered a system of observing and understanding movement which went beyond the mere measurable physical movement, to its qualitative and intentional aspects. It offered therefore a view of movement as a mind-body-feeling event and this system has proved useful in many areas, including dance-movement therapy, where the connection/integration of mind-body-feeling is central to its theory and practice.

While many share this more holistic perspective, many scientific disciplines seem still in thrall to the Cartesian view of a separation of mind and body, and the elevation of mind above body. However, slowly science is also, through its own methods, 'discovering' the integral connectiveness of mind and body.

Karen Bradley, an American dance-movement therapist and CMA, recently forwarded information on two articles linking hand gestures to thinking. The first is a link to a 2001 article in the Chicago Chronicle reporting on research carried out on gesture and thinking.

"Talking with our hands may actually make thinking easier," said Susan Goldin-Meadow, the Irving B. Harris Professor in Psychology and the College.

A study conducted by Goldin-Meadow and three colleagues asked people to remember a list of letters or words while explaining how they solved a math problem. Goldin-Meadow found that the people who gestured while explaining remembered significantly more items than those who did not gesture.

Their conclusion was that: *"These findings suggest that gesture reduces the cognitive load of explanation, freeing capacity that can be used on a memory task performed at the same time".*

The second link is to an American Psychological Association publication, *Journal of Experimental Psychology: General*, reporting on research carried out by co-researchers Mingyuan Chu and Sotaro Kita on the connection of hand gestures to spatial problem-solving. In a news release from the APA, Mingyuan Chu said "Hand gestures are spontaneous and don't need to be taught, but they can improve spatial visualization". He further noted: "From Galileo and Einstein to da Vinci and Picasso, influential scientific discoveries and artistic masterpieces might never have been achieved without extraordinary spatial visualization skills."

The title of this article is 'The nature of gestures' beneficial role in spatial problem solving'. It was printed in the *Journal of Experimental Psychology: General*, Vol 140(1), Feb 2011, 102-116. Authors: Chu, Mingyuan; Kita, Sotaro. For the interest of readers the Abstract follows:

"Co-thought gestures are hand movements produced in silent, noncommunicative, problem-solving situations. In the study, we investigated whether and how such gestures enhance performance in spatial visualization tasks such as a mental rotation task and a paper folding task. We found that participants gestured more often when they had difficulties solving mental rotation problems (Experiment 1). The gesture-encouraged group solved more mental rotation problems correctly than did the gesture-allowed and gesture-prohibited groups (Experiment 2).

Gestures produced by the gesture-encouraged group enhanced performance in the very trials in which they were produced (Experiments 2 & 3). Furthermore, gesture frequency decreased as the participants in the gesture-encouraged group solved more problems (Experiments 2 & 3). In addition, the advantage of the gesture-encouraged group persisted into subsequent spatial visualization problems in which gesturing was prohibited: another mental rotation block (Experiment 2) and a newly introduced paper folding task (Experiment 3). The results indicate that when people have difficulty in solving spatial visualization problems, they spontaneously produce gestures to help them, and gestures can indeed improve performance. As they solve more problems, the spatial computation supported by gestures becomes internalized, and the gesture frequency decreases.

The benefit of gestures persists even in subsequent spatial visualization problems in which gesture is prohibited. Moreover, the beneficial effect of gesturing can be generalized to a different spatial visualization task when two tasks require similar spatial transformation processes. We concluded that gestures enhance performance on spatial visualization tasks by improving the internal computation of spatial transformations.”

Finally, a recent Melbourne Age article highlighted connections between language and gesture with a report on a new approach to teaching languages, whereby gestures are matched

with the words. The technique, called “The Accelerative Integrated Methodology (AIM), uses drama, music, gesture, and theatre to teach language. This in essence recognises that language is more than words. It is embodied and contextual. It seems that the AIM approach recognises this.

These articles all create connections where years ago none would have been recognised – between movement/gesture and language, and movement and thinking. The article which follows, on the re-discovered Art of Gesture, highlights the connection of body, feeling and intention.

References:

- Chicago Chronicle, Nov. 30, 2001**, Vol. 21, No. 6. (Journalist: Josh Schonwald) <http://chronicle.uchicago.edu/011129/gesturing.shtml> (Original research report in the November 2001 issue of the *Journal of Psychological Science*.)
- The Age, August 23, 2011.** *Sign of the times: school finds success with new way of teaching languages.*
- Chu, Mingyuan & Kita, Sotaro (2011).** The Nature of Gestures’ Beneficial Role in Spatial Problem Solving. *Journal of Experimental Psychology: General*, 140 (1), 102-116.