

Study looks at perception vs. reality in response timing

Although many right-handed people perceive a difference, their timing with their left hand is as good as with their right, according to a study by Cheryl Coker, an associate professor of motor learning and biomechanics at New Mexico State University.



Coker said the study, which was presented at the American Alliance for Health, Physical Education, Recreation and Dance's National Convention, had two objectives. The first goal was to investigate the degree of difference between the two hands for a coincident timing task -- in this case, hitting a barrier in order to intercept an approaching light stimulus.

The second goal was to examine people's perception of their performance ability with each hand. This study looked at the timing proficiency of each hand, not the

control of dominant versus non-dominant hands.

"About 80 percent of the subjects indicated that they perceived a difference in hand proficiency," Coker said. "This perception was not validated by the study."

Coker said she became interested in the subject after a colleague surveyed major league switch hitters and found that they perceived a difference in swing patterns for each side. These perceptions were not substantiated by an analysis of three skilled switch hitters, which found no significant differences in swing pattern.

"After learning about the study of switch hitters, I wanted to look at coincident timing, which plays a role in the performance of several bilateral skills and has yet to be investigated," she said.

Thirty right-hand dominant university volunteers served as the subjects for Coker's study. A hinged wooden barrier was mounted on a table and a stimulus runway was positioned parallel with the edge of the table so that the final light in a series of runway lights was in direct line with the hinged barrier.

Each subject was to perform a single arm horizontal striking motion to displace the wooden barrier with a padded instrument in coincidence with the final light in a series that traveled down the runway.

After completing 60 trials with both hands at varying speeds, the subjects were asked if they perceived a difference in performing the task with their preferred versus their non-preferred hand.

Coker said that little practical difference existed between the hands for response accuracy. "In essence, both hands were equally proficient for all measures indicating that the two sides were the same," she said.

Coker said that this initial study raises interesting questions about how perceptions affect learning. "Is the learning of a skill with the non-dominant limb slower because of the perceived difference?" she asked. "There are many different ways to teach a motor skill and continuing to look at what processes happen during learning will allow us to develop better ways to facilitate that learning."

As part of the convention poster presentation, the abstract for Coker's study was published in the journal, "Research Quarterly for Exercise and Sport." Coker received her doctorate degree at the University of Virginia in 1995. She teaches motor learning, biomechanics, anatomy and theory of coaching.

Photo is available at <http://kiernan.nmsu.edu/newsphoto/coker.jpg>.

CUTLINE: Cheryl Coker, an associate professor of motor learning and biomechanics at New Mexico State University, tests coincident timing for a study of limb proficiency using a Bassin Anticipation Timer. (New Mexico State University photo by Darren Phillips)

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