

practice. The purpose of this study was to examine the changes in fractionated reaction times (PMT and MT) for supination and pronation hand/forearm movements in both simple and PRP situations across 4 consecutive days. Sixteen right-hand dominant college students volunteered for the study (8 men, *M*age = 25.13 years, *SD* = 3.64; 8 women, *M*age = 25.88 years, *SD* = 2.47). Based on the EMG activity of the pronator teres and biceps brachii, fractionated RTs for pronation and supination were measured for each hand on 4 consecutive days. A four-way analysis of variance (Gender x Day x Hand x Movement) with three repeated measures factorial design was used for data analysis. Significant RT and PMT decreases were found across days for both the simple and the PRP tasks ($p < .05$); no significant MT change was found across days. In the simple reaction time condition, RT and MT differences between supination and pronation were found, but not for PMT. The reaction times during the PRP task decreased across 4 days for both the first and second responses. However, the PRP effect remained significant after practice. The reaction time of the first response during the PRP task was significantly longer than the reaction time during the simple task across days. As a result, the PRP effect was a function of interstimulus interval/stimulus onset asynchrony (SOA), but was not eliminated with practice. Practice reduces reaction time in both simple and PRP conditions; however, the PRP effect was found to be robust after practice and was a function of interstimulus interval or SOA.

*Harold H. "Hal" Morris is included posthumously.

Brain Activation Patterns During Participation in Cup Stacking

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Cup stacking (*Speed Stacks*) is a relatively new activity that has been highly promoted at many of the state, regional and national conventions for physical educators. One of the claims of *Speed Stacks* is that participants are "...using both sides of their bodies and brains to develop skills..." (*Speed Stacks, Inc.*, 2004). These claims are based on other brain research, but empirical evidence with the task of cup stacking is lacking. The purpose of this study was to empirically examine the electrical activity of the two hemispheres of the brain, as measured by electroencephalogram (EEG), while cup stacking. Participants ($N = 18$) were college-age volunteers who completed two practice sessions (30 min each) and one testing session. During the first session the participants were introduced to the task (i.e., the cycle stack) and were allowed to practice. During the second session the participants were shown a video to review the task and practiced for the remaining time. For the third session, the participant was fitted with the EEG electrode cap following the standard electrode placement of the International 10-20 system (Jasper, 1958). The participants then completed five baseline trials (30 s each) in which they were asked to stand quietly looking at the cups. Following the baseline, the participants performed five trials for each of four tasks (i.e., the cycle stack using both hands, the cycle stack using only the right hand, the cycle stack using only the left hand, and the cycle stack using both hands with the Mini *Speed Stacks*) the order of which was randomized. Means for the five trials for each condition (i.e., the four tasks and the baseline) were calculated. The dependent variable was a global hemispheric measure obtained by calculating the mean of the frontal, central, temporal, and parietal sites for the left and right hemispheres. The data were analyzed using a 5×2

(Condition x Hemisphere) repeated measure analysis of variance. The results of the analysis revealed a significant main effect for condition, $F(4, 68) = 5.171, p > .05$, and a significant interaction, $F(4, 68) = 7.736, p > .05$. During the left-hand condition, activity in the right hemisphere was larger than the left, while for the right-hand task, the left hemisphere was greater than the right. The results of this study support the claim that cup stacking does use both sides of the brain.

Characteristics of Expert Wheelchair Tennis Players According to Visual Selective Attention Preference

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Examination of the visual selective attention of expert wheelchair (WC) tennis players when viewing a serve revealed two distinct eye movement patterns according to research by Hunfalvay (2004). These results indicated that one group of expert WC athletes predicted the ritual and preparatory phases of the serve ahead of time (referred to as the WC Predictive group) while a second group watched the motion of the serve as it occurred in 'real time' on the videotape (referred to as WC Real Time group). As all participants were expert WC tennis players, these two distinct visual selective attention patterns seemed perplexing and instigated questions as to why these differences manifest. Hence the purpose of this research was to extend results from Hunfalvay (2004) in a systematic effort to understand why two distinct visual selective attention patterns emerged. A total of 43 expert WC participants from the original study were asked to complete a questionnaire pertaining to their past playing experiences and coaches. A total of twenty participants completed and returned the questionnaire, 9 WC Real Time participants (ages 18-44 years, $M = 34.56, SD = 10.01$) and 11 WC Predictive group participants (ages 19-54 years, $M = 36.09, SD = 11.44$). These WC tennis players were ranked from 1 to 48 on the International Tennis Federation tour between August 31st, 2002 to October 1st, 2003. Percentage and average results were calculated. Results revealed that the WC Predictive group participants played able-bodied (AB) tennis prior to playing WC tennis, for a shorter period of time than the WC Real Time group. The WC Predictive group played WC tennis for a longer period of time than the WC Real Time group. WC Predictive group participants had coaches who were more likely to be WC certified than those participants in the WC Real Time group. All respondents from the WC Predictive group reported believing that there were differences between returning serve as an AB versus a WC player, where as only half of the WC Real Time group reported believing that there were differences. These results are discussed in terms of the influences coaches have on the cues used by WC players and the unique qualities of WC compared to AB tennis.

The Effect of Attentional Focus on Skill Acquisition and Transfer Performance Under Psychological Stress

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Performers tend to direct their attention to themselves under stress. Such self-focused attention in turn interrupts the flow of