Combined Abstracts of

2011 Australian Psychology Conferences

The Australian Psychological Society Ltd

Editors: Athena Politis,
Vicky Mrowinski Assoc MAPS and
Nicholas Voudouris PhD MAPS

ISBN: 978-0-909881-43-6

Implicit learning of weakly metrical temporal structures

TERRY, J. (MARCS Auditory Laboratories, University of Western Sydney), STEVENS, C. (MARCS Auditory Laboratories, University of Western Sydney), TILLMANN, B. (Lyon Neuroscience Research Center)
j.terry@uws.edu.au

Implicit learning (IL) of temporal structure was investigated using an auditory Serial Reaction Time Task (SRTT). Participants discriminated pseudo-randomly presented syllables (*Pa, Ta, Ka*) in sequences that followed one of two repeating inter-onset interval (IOIs) structures. The alternate structure was presented in a test block. Both structures were weakly metrical and had identical figural grouping patterns; they differed only in the duration of the between-group IOIs. As hypothesised, RTs to syllables following the between-group IOIs increased significantly when the IOIs were either shortened or lengthened in the test block but only for the group trained with one of temporal structures. Analyses of the unlearned structure indicated that it was more syncopated and metrically ambiguous than the learned structure. Post-tests revealed that participants had little explicit knowledge of the temporal structure. Hence, the findings suggest that between-group IOIs can be implicitly learned via exposure to a temporal structure.

Perceptual asymmetries in motion and colour

THOMAS, N. (Flinders University), SCHNEIDER, O. (University of Saskatchewan), GUTWIN, C. (University of Saskatchewan), & ELIAS, L. (University of Saskatchewan)
nicole.thomas@flinders.edu.au

Hemispatial neglect patients show a rightward spatial bias following right parietal lobe damage. Neurologically normal individuals exhibit a similar bias toward the left, possibly as a result of right hemisphere involvement in spatial attention. The left bias is also influenced by vertical visual field, potentially due to visual stream processing differences. Three experiments used tasks targeting either dorsal or ventral stream processing to assess perceptual asymmetries. Undergraduate students completed a motion task, an isoluminant colour task, and the greyscales task. Leftward biases were expected for the greyscales and motion tasks, whereas no significant biases were expected for the isoluminant colour task. Results indicated the left bias occurred reliably during motion, when the dorsal stream was preferentially engaged, but leftward biases were nearly negated in the isoluminant colour task. It is suggested that tasks which target dorsal stream processing may lead to a more consistent leftward spatial bias.

Accuracy and expertise in human fingerprint identification

THOMPSON, MB. (The University of Queensland, National ICT Australia, Queensland Research Laboratory), TANGEN, JM. (The University of Queensland, National ICT Australia, Queensland Research Laboratory), & MCCARTHY, DJ. (Forensic Services Branch, Queensland Police Service)
mbthompson@gmail.com

Fingerprint identification has been used in criminal courts for over 100 years but, until now, there have been no properly controlled experiments on the identification accuracy of human fingerprint examiners. Examiners have even claimed to be infallible, but the US National Academy of Sciences has condemned these claims as scientifically implausible. Here we show that qualified courtpracticing fingerprint experts—from five major state and federal police agencies—are exceedingly accurate compared to novices, but are not infallible. Experts did tend to err on the side of caution, however, by making errors that would free the guilty rather than convict the innocent. Even so, they did make the kind of errors that may lead to false convictions. Interestingly, they were much faster to make a decision when they were right than when they were wrong. Implications for expert testimony are explored as well as the support for nonanalytic processing of fingerprints.

Sex differences in landmark navigation

TLAUKA, M. & MILLS, C. (Flinders University)
michael.tlauka@flinders.edu.au

The study examined sex differences in spatial ability. In a route-learning task through a computer-simulated environment, female and male university students repeatedly negotiated a series of rooms each containing two exit doors. The task required participants to learn the doors leading to the next room, and each room contained distinctive landmark objects that were female-oriented, male-oriented or neutral. When navigating the route female and male participants did not differ in the rate of learning, but in