POSTER SESSION IV

Saturday Noon
Hynes Convention Center, Grand Ballroom A-C
Viewing 11:00-1:30, Author Present 12:00-1:30

MULTI-SENSORY INTEGRATION

(4001)

Perceptions of Planned Versus Unplanned Malfunctions: A Human-Robot Interaction Scenario. THERESA T. KESSLER, KEITH MACARTHUR, MANUEL TRUJILLO-SILVA, THOMAS MACGILLIVRAY, CHRIS RIPA and PETER A. HANCOCK, *University of Central Florida* — The present study investigated the effect of malfunctions on trust in a human-robot interaction scenario. Participants were exposed to either a planned or unplanned robot malfunction and then completed two different self-report trust measures. Resulting trust between planned and unplanned exposures was analyzed, showing that trust levels impacted by planned malfunctions did not significantly differ from those impacted by unplanned malfunctions. Therefore, it can be surmised that the methods used for the manipulation of the planned malfunctions were effective and are recommended for further study use.
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(4002)

The Effect of Cross-Modal Emotional Priming. DOYEON KWON and SOWON HAHN, *Seoul National University* — In two experiments, we investigated the role of affective states in cross-modal interaction of emotional priming. Previous literature provided only limited evidence for the effect of emotional auditory stimuli in the visual information processing. In Experiment 1, the auditory emotional prime (pleasant, unpleasant, neutral) was followed by a facial expression stimulus. Participants evaluated the valence of the facial expression as quickly as possible while ignoring the preceding sound. The results showed faster responses when the emotional valence of the auditory prime and the visual target was congruent compared to the emotionally incongruent conditions. In Experiment 2, we aimed to replicate the results of Experiment 1, while using geometric shapes with different valence as visual stimuli. Participants' affective states were also measured to understand the interaction between affective states and emotional priming. The results demonstrated that individual differences of affect also played a role as a moderator in cross-modal emotional priming.
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(4003)

Effects of Learning New Sounds or Meanings for Kanji Characters on Synesthetic Grapheme-Color Association. KAZUHIKO YOKOSAWA, TAKUYA TSUSHIRO and QI LI, *The University of Tokyo*, MICHIKO ASANO, *Rikkyo University* — Synesthetic colors tend to be associated with Japanese logographic Kanji characters based on their phonological and semantic information. What would happen to these synesthetic colors if Japanese grapheme-color synesthetes learn new sounds or meanings of Kanji characters? We taught Japanese

synesthetes (N = 8) new sounds or meanings for familiar Kanji characters, using sounds or meanings in Chinese, which are different from those in Japanese. Synesthetes selected a color corresponding to each character from a color palette before and after learning new sounds or meanings. They also selected colors for control Kanji characters about which no novel information was taught. Results indicated that synesthetic colors associated with characters in the new-learning condition showed a small, but statistically significant decrease in pre- and post-learning consistency as compared to colors associated with control characters, suggesting that synesthetic colors are modulated to reflect the synesthete's latest knowledge about the graphemes.
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(4004)

A Causal Inference Model Explains Perception of the McGurk Effect and Other Incongruent Audiovisual Speech. JOHN MAGNOTTI and MICHAEL BEAUCHAMP, *Baylor College of Medicine* — Audiovisual speech integration combines information from auditory and visual cues to increase accuracy. When auditory and visual speech emanate from different talkers, however, integration decreases accuracy. Therefore, a key step is causal inference: deciding whether speech cues have the same source. In the well-known McGurk Effect, incongruent audiovisual syllables are integrated, raising two fundamental questions: 1) why are incongruent auditory and visual syllables integrated; 2) why does the McGurk effect only occur for specific syllables? We describe a causal inference model to explain perception of audiovisual speech. We compared model predictions with data from 265 subjects viewing McGurk and non-McGurk syllables. The model accurately predicted integration for McGurk stimuli and no integration for non-McGurk stimuli. An identical model without causal inference failed to accurately predict perception. Our results demonstrate a fundamental role for causal inference in audiovisual speech perception, providing a computational framework for studying speech at varying audiovisual disparity.
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(4005)

Audio-Visual Perception of Gender by Infants Emerges Earlier for Adult-Directed Speech and Female Faces. ANNE-RAPHAELLE RICHOZ, *University of Fribourg*, ANNE HILLAIRET DE BOISFERON, *Université Grenoble Alpes*, PAUL C. QUINN, *University of Delaware*, CAROLE BERGER and HÉLÈNE LOEVENBRUCK, *Université Grenoble Alpes*, DAVID J. LEWKOWICZ, *Northeastern University*, KANG LEE, *University of Toronto*, MARJORIE DOLE, *Université Grenoble Alpes*, ROBERTO CALDARA, *University of Fribourg*, OLIVIER PASCALIS, *Université Grenoble Alpes*, (Sponsored by Camos Valérie) — Early multisensory perceptual experiences shape the abilities of infants to extract various attributes of faces, including gender, age and emotion. Here, we investigated