**2022/2023 Summer Research Project Description**

Please use this template to create a description of each research project, eligibility requirements and expected deliverables. Project details can then be uploaded to each faculty, school, institute, and centre webpage prior to the launch of the program.

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| **Project title:** | **The Influence of Crossmodal Correspondences on the Cueing of Spatial Attention** |
| **Project duration, hours of engagement & delivery mode** | 8 weeks during Summer Vacation, 20hrs per weekThe applicant will be required on-site for the project. |
| **Description:** | Crossmodal correspondences (CMCs) are observed relationships between seemingly unrelated stimulus features in different modalities (Marks, 1987). For example, the auditory feature of pitch appears to have CMC relationships with a number of seemingly unrelated visual features including visual size, elevation in the visual field, and lightness. These relationships are such that certain feature levels in one modality appear to associate preferentially with certain feature levels in the other modality. So, in terms of auditory pitch and the various mentioned visual features, high (compared to low) pitch tones are observed to associate preferentially with visually smaller (compared with larger) objects with visual stimuli higher (compared with lower) in the visual field, and with whiter (compared with blacker) objects. The CMC feature pairs that are observed to associate preferentially are typically labelled congruent and the reverse pairings, incongruent.Preferential association in CMCs has been observed in a number of ways, but most commonly in speeded response paradigms. In a typical arrangement, observers presented with pairs of crossmodal stimuli are tasked with rapidly detecting or classifying the stimulus in one modality with the stimulus in the other modality being task irrelevant and non-predictive. The general finding is that target stimuli presented with a CMC congruent crossmodal stimulus are detected or classified faster than those presented with an incongruent crossmodal stimulus. Recently, we demonstrated that attentional mechanisms do not underlie CMC congruency effects (Zeljko et al., 2019). It is possible, however, that crossmodal congruency may act as a multisensory feature that can enhance attentional processes. This project forms a part of our ongoing work investigating this issue.Our general approach is to use psychophysical methods, typically reaction times or signal detection theory. We use standard PCs to present participants with audiovisual stimuli and record their responses. Our experimental programs are written in Matlab using the Psychtoolbox extensions. Experimental sessions usually involve a single participant completing several experimental tasks over a one-hour period. |
| **Expected outcomes and deliverables:** | Research scholars will be primarily involved in the experimental aspects of the project. Specifically, this might include the organisation and scheduling of experiment participation, the running of experimental sessions, and the collection and collating of raw data. Participation in weekly lab meetings will be expected and scholars may present experimental findings at these meetings.Scholars will gain skills in practical aspects of operating a psychological study including participant management, data collection, and communication of results. |
| **Suitable for:** | This project is open to psychology honours students who have completed at least their 3rd year of study. Some Matlab programming experience will be useful. |
| **Primary Supervisor:** | Dr Mick Zeljko |
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