The Luria Award for Doctoral Research was awarded to Sharpley Hsieh for the following presentation

Are you Happy? Knowledge of Words that Describe Emotions in Frontotemporal Dementia

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Objective: Frontotemporal dementia (FTD) is a progressive neurodegenerative disease where impairment in the recognition of (particularly negative) emotions is seen in two subtypes: behavioural-variant FTD (bvFTD) and semantic dementia (SD). Most studies have used visual stimuli such as photographs of facial expressions which contain more negative than positive emotions (e.g., anger, fear, disgust, sad versus happy, surprise). Whether or not knowledge of words that describe emotions (e.g., fascinated, insulted, etc.) is impaired in FTD and whether the negative bias remains after stimuli are better equated has not been investigated.
Participants and Methods: Patients with FTD (bvFTD, $n = 10$: SD, $n = 8$), Alzheimer's disease (AD, $n = 10$) and controls ($n = 15$), completed two tasks: (1) a Word Synonyms test which involved matching one of two emotion words with a target emotion word (e.g., whether 'betrayed' or 'terror' is synonymous with 'fear'); and (2) a Word Association test which involved selection of words that were most strongly associated with a target emotion word (e.g., whether 'play' or 'fun' was best associated with 'fear'). Participants also undertook a standardised facial emotion recognition test.
Results: As expected, both FTD subtypes were impaired in the recognition of negative facial expressions of emotions. In contrast, FTD patients were impaired on both the Word Synonyms and Word Association tasks for negative and positive emotion words. Scores on the Word Synonyms task correlated with the Ekman 60 Faces Test in both FTD subtypes. The AD group did not differ from controls in any of the emotion measures.
Conclusions: Results show that emotion deficits are striking in FTD in comparison to AD and extend to not only negative but also positive emotions. Findings suggest that the negative bias previously reported may be due to the nature of the stimuli that have been used rather than a true reflection of the emotion deficit in FTD.

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The Kevin Walsh Encouragement Award for Honours or Masters Research was awarded to Peter Bull for the following presentation

Type of Recognition Test may Influence the Relative Contributions of Familiarity and Recollection when Recognising Emotional Visual Images

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Objective: Familiarity and recollection appear to be distinct memory processes. Assessment of deficits to these memory processes critically depends on the ability of memory tests, such as single-item tasks and forced choice recognition, to distinguish between familiarity and recollection. There is debate as to whether a recollection effect demonstrated previously on a single-item task would generalise to a forced-choice task. Kensinger and Choi (2009) had found that recollection of negative images was superior to that of neutral or positive images when presented to the right hemisphere. We modified their procedure to use a forced-choice recognition test.
Participants and Methods: Twenty-four young adults viewed a series of 450 images, each showing an object of either negative, neutral or positive emotional valence. Each image was presented briefly to the left or right visual field while participants maintained a central fixation. A surprise four-alternative forced-choice memory test followed.
Results: Contrary to the findings of Kensinger and Choi, no significant recollection advantage was found for negative images, presented to either hemisphere. However, reaction time data indicated that cognitive processing for negative images was significantly slower relative to that for positive and neutral items.
Conclusions: A growing literature suggests that single-item tasks such as the same/similar/new procedure can probe recollection, but that forced-choice tests may rely more on familiarity. Our results also suggest this may be the case; memory for negatively valenced objects was not enhanced using a forced-choice recognition test, despite previous findings of a recollection effect on single-item task. We conclude that further work is needed to clarify the interaction between task type and recognition process.

The ASSBI Travelling Award for the best student abstract was awarded to Valerie van Mulukom

Hippocampal and Amygdala Connectivity During Simulation of Novel Future Events

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Objective: Although a common core network is engaged by remembering the past and imagining the future, the right hippocampus (RHC) is differentially active for imagining relative to remembering. In a recent MRI study, our univariate analyses revealed that not only is the RHC responsive to the novelty of future events, but also the right amygdala – a region not previously shown to be active during future simulation. This current multivariate analysis examined the connectivity between these two regions and the rest of the core

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network, with the objective of better characterising the amygdala activity and its relationship to the RHC.

Participants and Methods: Participants ($N = 20$) generated 90 past events in a pre-scan interview, identifying a unique person, object and location in each. During scanning, these details were randomly rearranged into novel combinations and participants imagined future events incorporating the details. They then re-imagined the same event twice more, resulting in novel ('First') and repeated ('Third') imaginings of the same future event. Activity during these two conditions was extracted from RHC and right amygdala and entered as seeds into a multivariate Partial Least Squares (PLS) analysis.

Results: The PLS seed analysis resulted in one significant latent variable that indicated strong functional connectivity between the RHC and amygdala seeds during both the First and Third conditions. Furthermore, both seed regions exhibited similar connectivity with other regions in the core network, including left hippocampus, amygdala and inferior frontal gyrus, and bilateral parahippocampal and fusiform cortex.

Conclusions: The PLS analysis revealed that the RHC and amygdala are strongly connected with each other as well as the same regions of the core network, and this connectivity tracks across event repetitions. This result suggests that these two regions work together as a functional unit when constructing novel future simulations.

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