Ownership and attention: P300 modulation to self-owned items and ownership cues
Philip Collard and Dave Turk
University of Aberdeen
Symposium on the Social Brain

Background

Information encoded in relation to self through ownership benefits from an elevated memorial status (Cunningham et al. 2008).

Established self-relevant information (e.g., name, face, places/traits) elicits automatic shift of attention (Bargh, 1982), as does self-relevance through ownership (Miyakoshi et al., 2007).

Similar effects on attention and memory are seen for non-evaluative temporary self-item associations (Turk et al., in press). Cognitive processes associated with the allocation of attention are engaged at the moment that ownership is established.

Question: Do the effects associated with newly established ownership impact on perceptual processing of owned items?

We recorded electrophysiological responses to the initial presentation of ownership cues and to the later presentation of objects assigned to temporary ownership.

Results

Cue

Object

Method

Participants: 16 from the University of Aberdeen School of Psychology (9 Females, mean age 28.1 years).

Stimuli: 144 images of items available in major supermarkets (e.g., fruit, clothing, electrical items etc.). Placed into two equal sets matched on name length and category representation. One set assigned to self and one assigned to other ownership.

Ownership: Participants told they owned contents of one basket. Told to place items in basket on basis of colour cue by way of button press.. Colour/Owner assignment counterbalanced across participants.

Analysis was centred on ERP responses to the presentation of the coloured ownership cue and to the presentation of the object. Around midline and lateral, Frontal, Central, Parietal and Occipital Electrode Sites.

Summary

Results highlight importance of attentional resources in the encoding of self-item associations through temporary ownership.

Self-ownership cues elicited differences in ERPs associated with attentional biases (P2 & P300 effect). A smaller positivity in the P300 window was also observed to self-owned objects.

Absence of electrophysiologically measureable differences in early perceptual processing.

Further Questions

Can P300 encoding effect predict self-memory bias?

References

Cunningham et al. (2008) Consciousness & Cognition, 17, 312-318
Turk et al. (in press) Psychological Bulletin, 121, 371-394

Contact: p.collard@abdn.ac.uk

Trial Structure

After a fixation, a black border would appear, the border would then turn with red or blue to indicate that the object about to be presented belonged to either the participant (Self condition) or the experimenter (Other condition). After the colour change, the object would appear within the border.

Finally, two shopping baskets would appear and the participant was asked to "sort" the item into their basket or their experimenters basket.