

(OS\_12.5)

**Consistency effects in visual lexical decision task: Influence of item's presentation**

PETROVA, A. & GASKELL, G. *University of York, UK.*

Several studies carried out using the lexical decision task suggest that words with consistent (one-to-one) phonology-to-spelling mappings are easier to recognise than inconsistent words (one-to-several mapping). However, these effects appear less reliable in the visual than the auditory modality. This pattern of results could indicate a qualitative difference between the recognition systems, but alternative possibilities rely on differences in informational availability between modalities. The current study addressed the latter explanation using a range of different procedures and a set of items that did not show consistency effects in the classic version of the task. We found phonology-to-spelling consistency effects in visual lexical decision task using three different item presentation methods: Experiment 1 used a short item presentation duration (100 ms), Experiment 2 used letter-by-letter presentation and Experiment 3 used presentation with visual noise. This study suggests that interactions between phonology and spelling are present not only in the auditory modality but also in the visual modality. Consistency effects may be observable easily in visual word recognition only in noisier conditions that make the recognition process more similar to auditory processing. Importantly, our results also suggest that the underlying substrates for spoken and visual word recognition operate in broadly comparable ways.

· Face recognition ·

OS\_13 (13.1-13.2), Room 1

OS\_13\* (13.3-13.4), Room 1

(OS\_13.1)

**Temporal integration of faces learned from view sequences and recognition of novel views**

ARNOLD, G. & SIÉROFF, E. *Institut de Psychologie, Université Paris Descartes, CNRS, FRANCE.*

When faces are learned from rotating view sequences, novel views may be recognized by matching with multiple discrete views, or with an integrated representation of the sequence. A view-matching process should benefit from long view durations, allowing the attention to sequentially focus on each view during the encoding of the sequence. Conversely, an integrated-representation process should benefit from short view durations, allowing the distribution of attention over the entire sequence in a short temporal window. In a sequential comparison task, we tested the recognition of novel interpolated and extrapolated views after learning faces from rapid (240 ms for each view) and slow sequences (960 ms for each view). In a first experiment, recognition was tested with internal views (learned and interpolated). In a second experiment, recognition was tested with internal and extrapolated views. Results showed a global superiority of rapid over slow sequences, in favour of the integrated-representation hypothesis. In addition, the recognition pattern for the different viewpoints in the sequence depended on the absence (Experiment 1) or presence (Experiment 2) of extrapolated test views. The presence of extrapolated views affects the global representation of the face, modifying the "centre of gravity" of the representation.

(OS\_13.2)

**Early perceptual processing of facial expression is independent of task demands: an event-related potentials study**

AGUADO, L., VALDES-CONROY, B. & FERNANDEZ-CAHILL, M. *Universidad Complutense de Madrid.*

Extensive previous evidence from event-related potential (ERP) studies has shown that early components sensitive to visual encoding of faces are modulated by their emotional expression, suggesting that affective relevance influences perceptual processing since the earliest stages of information analysis. In this study we looked at the influence of differences in task demand on these modulations. Happy, angry and expressively neutral faces were presented under three different task conditions, 1) emotion discrimination (emotional vs non-emotional), 2) gender discrimination and 3) irrelevant task (discriminating two symbols placed over the nose region). Supporting previous work we found significant modulations due to emotional expression on the P100, N170 and EPN (early posterior negativity) components, detected over posterior regions. A right-lateralized, late positive component (LPC), detected over posterior regions around 400 ms after stimulus onset, appeared to be sensitive only to task demands, with larger amplitudes for the emotion discrimination task. A lack of interactions between emotional expression and task demands suggests that the influence of facial expression on perceptual processing takes place regardless of the explicit orientation to the affective meaning of faces. Supported by grant PSI2010\_18682, of the Ministerio de Ciencia e Innovación (Spain).

(OS\_13.3)

**Brain and language acquisition research: Construction of recursive exercises for non verbal communication devices**

LOWENTHAL, F.<sup>1</sup>, FORTEMPS, P.<sup>2</sup> & WAUTIE, V.<sup>1,2</sup>.  
<sup>1</sup>*Cognitive Sciences, University of Mons, Mons (BE),*  
<sup>2</sup>*Mathematics and Operational Research, University of Mons, Mons (BE).*

One of us (FL) has shown that Non-Verbal Communication Devices approaches (NVCDs) favor both the acquisition and the reacquisition of language skills (Lowenthal & Saerens, 1986). Lefebvre et al. (2007) have shown that these approaches favor the emergence of new cerebral abilities. Lowenthal (2007) formulate the hypothesis that these results are essentially associated to the use of recursive exercises in an NVCD approach. In order to test this hypothesis, the authors want to use finite automata enabling the subject to discover the regularity of the sequence of exits: they want to use in parallel non recursive, partially recursive and fully recursive exercises in three different but equivalent groups. This requires the construction of equivalent exercises of different types: clearly recursive, partially recursive and totally non recursive. For the researcher, the creation of such exercises is an arduous task. In this paper we describe a systematic and algorithmic approach for constructing such exercises. We will present a software adapted for these constructions. The intended experimental setting will also be discussed.