the duration during which traces are passively maintained in working memory (i.e., the longer the duration, the poorer the recall). Despite the absence of active maintenance, working memory capacity increases from 4 to 6–7 years of age. We examine two potential sources of development that could account for such an increase. In a first series of experiments, we examine the age-related changes in the rate of forgetting through time. In a second series, we assess the role of attention in working memory tasks.

The development of visual and verbal short-term memory consolidation in children

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Research suggests that a process of short-term consolidation is evident in children. Yet, little is known about the nature of this process, the development of consolidation across childhood, or the relationship between consolidation and working memory performance. In this study, we compared consolidation functions across 7- to 11-year-olds using visual and verbal change-detection tasks designed to measure short-term consolidation. Similar consolidation functions to those reported for adults were found for children. For the visual task, the older age-groups were faster overall, however, the consolidation functions did not differ across age-groups. In contrast, the verbal consolidation functions varied across age-groups. Associations were evident between estimates of visual consolidation efficiency and measures of working memory, however, associations were less consistent between estimates of verbal consolidation efficiency and measures of working memory. These results suggest that the consolidation of visual and verbal information may involve separate mechanisms that follow different developmental trajectories.

Accumulation of knowledge in the Hebb repetition paradigm affects immediate serial recall: Implications for the development of verbal working memory

Satoru Saito, Masataka Nakayama *Kyoto University, Japan*

Children receive considerable information from their language environment, which affects the development of verbal working memory. In order to examine the effect of language experience on verbal working memory - particularly serial order memory - we conducted Hebb repetition experiments with a sample of adults. Although previous studies reported that the Hebb paradigm detected only limited effects of repeated presentation of serial order information at an item position level, our results indicated that extensive exposure to patterned serial order information promoted the accumulation of position-specific order information in long-term memory and that such phonotactic knowledge had an impact on immediate serial order memory. This suggests that language experience shapes knowledge about linguistic serial order information, which subsequently affects verbal working memory performance.

IS045
Cultural and social factors in the development of face recognition

Organizer: Chang Hong Liu *Bournemouth University, United Kingdom*

Session Abstract:

This symposium focuses on cultural and social influences on the development of face recognition. Prior research has revealed cultural differences in face recognition. However, little is known about the onset of these differences in the early childhood. The purpose of the symposium is to bring together new findings in this area and to exchange information about how different forms of cultural and social elements play a role in development of face recognition. The symposium will consist of five talks. The first theme of these talks will be face-processing strategies inferred from children's eye movement. The second will be on the face processing bias in infants. The third will be on developmental changes in attention to faces to face in early infancy, the fourth will be on development of the own-race advantage, and the fifth will be on perceptual narrowing for faces in infants.

British children all look the same: Patterns of eye movements are stable from five years of age

Rachel J Bennetts, Chang Hong Liu *Bournemouth University, United Kingdom*

Adults and older children show stereotypical patterns of eye-movements when viewing faces, which are influenced by their cultural environment. However, it is unclear when and how these culturally-influenced patterns develop throughout childhood, and how they face recognition ability. In this study, 45 British Caucasian children (aged 5–11 yrs) completed a memory task with Caucasian and Asian faces. Fifteen children completed the task in an eye-tracker. There was no behavioural difference between Asian and Caucasian face recognition, and no difference in viewing time for individual features (eyes, nose, mouth) of Caucasian and Asian faces. Children spent more time viewing other facial areas (e.g., cheeks, forehead) and hair for Asian than Caucasian faces. This pattern remained consistent across the age range tested. These results suggest that children's patterns of eye movements are relatively stable by 5 years of age, and exhibit subtle effects of race even in the absence of behavioural differences.

Spatial and temporal stimulus characteristics eliciting attention to faces in early infancy

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Human infants preferentially look at faces from birth. While this initial upright face preference seems to depend on a very crude representation, the preference become more specifically tuned to realistic faces within a few months. This talk will discuss findings from studies examining spatial and temporal characteristics of stimuli that elicit an upright face preference in infants. Even though the coarse, low spatial frequency (LSF), content of facial images carries greater contrast energy, a recent study on 4-to 5-month-old infants revealed no advantage for LSF over high spatial frequencies (HSF) in eliciting an upright face preference in infants across image durations of 300 ms, 600 ms and 5 s. Rather, the results revealed that the infants showed an upright face preference at shorter image durations when faces were depicted with HSF compared to when they were depicted with LSF.

Development of the own-race advantage in school-age Taiwanese children: Revealed with a morphing face paradigm

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Previous studies on the other-race effect in children mostly focused on recognition memory. Here we explored the encoding advantage hypotheses in Taiwanese children. 5- to 12-year-old children and adults were tested with a sequential face matching task with swathes of morphed images of Caucasian and Asian female faces. In each trial, the participant viewed an Asian- or Caucasian-parent face followed by either the "same" (0%) or a "different" morphed face (15%, 30%, 45%, or 60% mixture). The group psychometric functions on rejection rates were fitted with sigmoidal functions. Adults exhibited a smaller discrimination threshold and a sharper slope in the Asian condition, supporting the encoding advantage hypothesis. Children aged 5–8 did not exhibit an encoding advantage for own-race; it appears to emerge around 9–10 and became apparent around 11–12. In sum, school-aged children made progress in discriminating own-race faces but their ability to discriminate other-race faces remained relatively unchanged.

Perceptual narrowing towards adult faces is a cross-cultural phenomenon in infancy: A behavioral