

visual compared to auditory information (Fig. 1). No significant difference was found when assessing cued memory accuracy. In Study 2, videos were split between those filmed using a ‘static’ or ‘moving’ frame. Results showed that videos shot with a moving frame were significantly more likely to be wrongfully recognised as ‘field’ perspective, compared to static videos. Our investigations revealed a clear relationship between sense of presence and familiarity as well as presence and vividness during recollection. In line with existing literature on sensory modality and memory, participants demonstrated better free recall for visual details, compared to auditory. However, this was not the case when participating in a recognition task. Future analyses will assess difference in accuracy across modalities when presented in unison at encoding, as well as compare perspective (1st vs 3rd) and its effect on free recall accuracy. Finally, the relationship of these modalities (unisensory vs multisensory & 1st vs 3rd person perspective) and subjective measures such as vividness and presence will be assessed to provide a wholistic picture of predictors for rich and vivid re-experiencing of events.

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The temporal unfolding of event construction following vmPFC damage

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According to recent views, the ventromedial prefrontal cortex (vmPFC) assists event construction by activating high-level autobiographical knowledge structures (e.g., the self schema, personal semantics) that guides the assembling of specific events. In healthy adults, the activation of these high-level memory structures precedes access to specific events while both remembering the past and imagining the future (Ciaramelli et al., 2019). The present study explores whether damage to vmPFC alters the temporal progression of the acti-

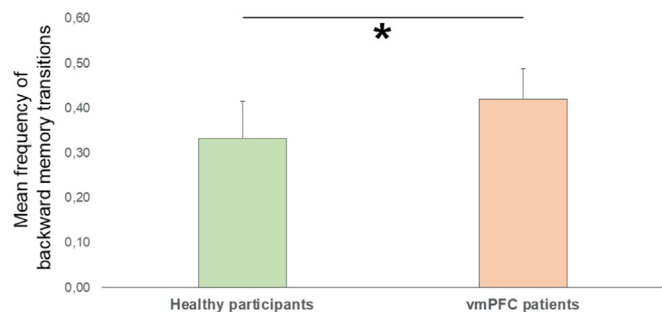


Fig. 1. Mean percentages of backward memory transitions. The error bars indication

vation of memory structures during past and future event construction. Patients with vmPFC lesions and healthy controls were required to retrieve past events and imagine future events in response to cue words or time periods, under a “think aloud” procedure, that is, reporting everything that came to their minds while constructing events (D’Argembeau & Mathy, 2011). Participants’ reports were assessed for the presence and temporal progression of memory structures characterized by different levels of abstraction and specificity. The results show that during event construction vmPFC patients accessed personal semantics and repeated events more frequently and specific events less frequently than controls. Moreover, vmPFC damage altered the temporal unfolding of event construction: vmPFC patients exhibited an abnormal tendency to proceed backwards in the event construction hierarchy (see Fig. 1), with the activation of abstract memory structures (e.g., personal semantics) often following (instead of preceding) that of unique events. The results confirm that a damage to vmPFC disarticulates the temporal progression of event construction and hinders access to specific events.

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Testing the influence of semantic and perceptual training on the formation of unitized representations

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Unitization is a strategy in which associations are encoded in episodic memory as one unique entity. Unitization allows episodic recognition to rely on familiarity (sense of knowing), instead of recollection (recalling the associated encoding context) that would otherwise be required to recognize associations. However, little still is known about the mechanisms underlying the formation of unitized representations. Some authors proposed that representations are unitized by being anchored within semantic memory (Tibon et al., 2014), while others have shown evidence of unitization following perceptual training on meaningless materials (Liang et al., 2020). In this study, we aimed to assess the impact of semantic knowledge on the formation of unitized representations. To do so, first we encouraged half of the participants (N = 19) to learn a semantic structure (i.e., category) on meaningless materials through a category learning task, while the other half (N = 21) focused on simple perceptual information. Then we promoted the formation of unitized representations on materials sharing similar features through an extensive 6-day perceptual training using a visual search task. Memory was tested pre- and post-training. Preliminary results suggest that unitization occurred following training, as perceptually trained items were recognized with greater correct and false recognitions compared with untrained ones, with a corresponding increase in both recollection and familiarity. However, the presence of pre-existing semantic structure (i.e., category) did not improve the formation of unitized representation, as these effects were comparable in both groups, suggesting that unitization occurred in

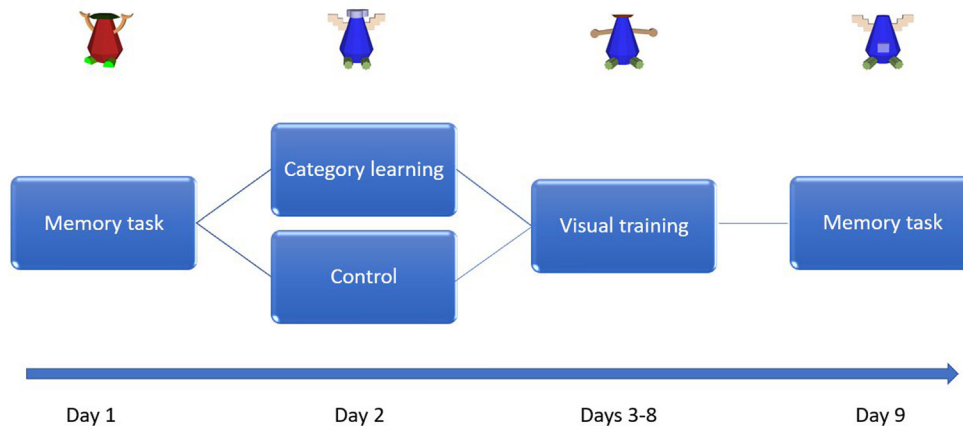


Fig. 1. Illustration of the protocol.

both groups to a similar extent. Hence, these preliminary results support the idea that visual training alone is sufficient to foster unitization (Fig. 1).

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Context modulates discrepancy attribution processes: Evidence from the word frequency mirror effect

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The word frequency mirror effect refers to the finding that low frequency words elicit higher hit rates and lower false alarm rates than high frequency words. According to dual-process accounts, the higher hit rates for low frequency words reflect increased recollection for this stimulus class. However, it has been argued that the difference in hit rates can additionally be accounted for by a relative familiarity mechanism, i.e., an increase in familiarity relative to an item’s pre-experimental familiarity (Coane et al., 2011). The current study investigated whether relative familiarity is based on a discrepancy attribution process which is modulated by contextual factors. Accordingly, low frequency old words exhibit a surprisingly high level of fluency, given their low level of absolute fluency. By attributing this discrepancy between expected and perceived fluency to a prior encounter, low frequency words produce a stronger relative familiarity signal. Importantly, fluency attributions are more likely to occur when fluency is unexpected, i.e., when fluent items are presented in the context of less fluent items. Therefore, we hypothesized that studied low frequency words would elicit more old responses than high frequency words especially when high and low frequency words are presented

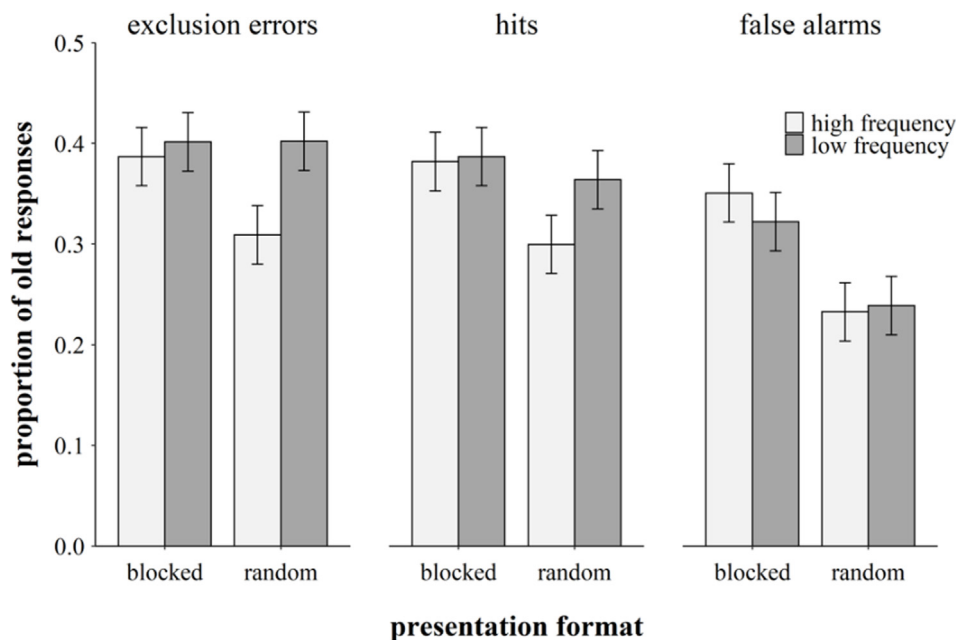


Fig. 1. Mean Proportions of Hits, Exclusion Errors and False Alarms as a Function of Word Frequency and Presentation Format. Note. Error bars represent 95%-confidence intervals for the interaction term.