

## Rehearsal processes in visuo-spatial working memory

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**Abstract** The concept of an active rehearsal mechanism that maintains material within short-term memory has been an integral feature of theoretical modelling in the 30 years since the publication of Baddeley and Hitch's multi-component model of working memory (Baddeley and Hitch 1974). The majority of research on the topic has focused on the maintenance of verbal material, and a well-documented account of verbal rehearsal has developed in which an active articulatory mechanism revives auditory memory traces stored within a temporary phonological store (Baddeley 1986, 2000). In contrast, accounts of rehearsal processes within visuo-spatial working memory have been less well developed (Pearson 2001, in press). This paper will review recent research that has focused on the rehearsal of visual and spatial material within working memory, with a focus on short-term memory for serially-presented spatial locations. Experiments will be discussed which have

investigated the nature of the cognitive mechanisms that underlie performance on specific visuo-spatial working memory tasks, with the emphasis on exploring the extent of central executive involvement (Rudkin et al. in press). Work will also be discussed that has demonstrated a role for oculomotor control processes during the rehearsal of location-specific representations in working memory (Pearson and Sahraie 2003).

It will be argued that visuo-spatial rehearsal processes within working memory are clearly more complex than comparable rehearsal processes that may operate for verbal material, and involve modality-specific oculomotor processes, as well as more strategically-based processes more closely associated with the central executive component.

**Keywords** Imagery • Representation • Memory

