

EFFECTS OF UNITIZATION ON IMPLICIT MEMORY FOR PICTURE-WORD PAIRS

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We examined in four experiments the effects of unitization on implicit memory for picture-word pairs. Copying picture-word pairs was used in Experiment 1 to create perceptual-motor unitization, sentence-generation was used in Experiment 2 to create semantic unitization, interactive imagery was used in Experiment 3 to produce conceptual unitization in imagery, and physical integration was used in Experiment 4 to produce object-based physical unitization. In accord with previous findings that support the activation view of implicit memory, results show significant item-specific repetition priming but insignificant association-specific repetition priming. Suggestions for future research are also discussed.

Repetition priming takes place when better performance occurs in response to previously studied items compared to unstudied items, without conscious or intentional retrieval of these previous episodes. Two theoretical accounts have been proposed to explain the mechanism through which repetition priming manifests, with the activation view (Morton, 1979) explaining repetition priming as re-activation or modification of pre-existing representations whereas the episode-based model (Jacoby, 1983; Tulving & Schacter, 1990) accounting the phenomenon as fluency in processing the reinstatement of a previous episode. The necessity of pre-existing

representations in producing implicit memory thus is the crucial test between the two theoretical accounts. Results from studies of implicit memory for new associations that do not have pre-existing representations, however, are equivocal in supporting either account. Furthermore, studies of repetition priming for newly learned picture-word associations fail to show any association-specific repetition priming (Dean & Young, 1996; 1997; Chao, Yeh, & Huang, 2000). In contrast, explicit memory of new associations can be obtained after a single learning trial.

That previous studies, using a matching task in both study and test phases, failed to find any association-specific repetition priming in picture-word pairs may result from no association being formed in the study phase to show its influence. To strengthen the association between pictures and words, this study employed four methods that have been shown to enhance relational processing between unrelated items. From converging results of the four experiments, we find significant item-specific repetition priming but fail to find significant association-specific repetition priming. Because representations pre-exist for items and not for new associations, the results hence support the activation view of implicit memory.

Keywords: Implicit memory, New associates, Picture-word unitization