

Posture-Dependent Encoding Specificity & Memory



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Abstract:

The current research study examines **whether there is a posture-dependent effect of encoding specificity on explicit memory and implicit memory related to standing/sitting at a desk.** While there was no encoding specificity effect on implicit memory, authors did find an effect of encoding specificity on reaction times for explicit memory. Evidence was also found for matching context on implicit priming, as well. Research examining encoding specificity generally finds **a benefit to memory when the context of encoding and retrieval are matched.**

Methods:

Participants (N = 16) came to the research lab and completed the following three phases:

- **Exposure Phase:** Participants rated the pleasantness of one of two lists of 24 words (participants only saw one of the lists).
- **Distractor Phase:** Participants completed a test of working memory capacity via an automated operation span (OSPAN) task.
- **Test Phase:** Participants completed two tests of memory, one was a word fragment completion task (implicit memory) and the other was a recognition task (explicit memory and false memory). Stimuli used during the test phase trials included words seen during exposure, new unrelated words, and new related words.

Study Design: Participants were randomly assigned to either a sit-down or stand-up workstation during the exposure phase. Then, they were randomly assigned to the same or opposite workstation condition during the test phase.

Results:

- Implicit Memory: The authors found no significant difference between matched and mismatched conditions in word fragment completion of previously presented words. However, they did find a marginal difference between matched and mismatched conditions in word fragment completion of words related to previously presented words.

- Explicit Memory: The authors found no significant difference between matched and mismatched conditions in explicit recognition of previously presented words. However, they did find a significant difference between matched and mismatched conditions in reaction time during recognition trials for previously presented words.

- False Memory: The authors found no significant difference between matched and mismatched conditions in explicit recognition or words related to previously presented words. However, they did find a marginal difference between matched and mismatched conditions in reaction time during recognition trials for words related to previously presented words.

Discussion/Interpretation of Results:

- Implicit Memory: The authors found no effect of encoding specificity on word fragment completion, indicating that implicit memory is not affected by encoding specificity. At the same time, the marginal difference seen between the matched and mismatched conditions for related (lure) words does indicate that matching encoding and retrieval postural context may positively affect implicit priming.

- Explicit Memory: The significantly lower reaction time for matched conditions during explicit recognition highlights how the matching of encoding and retrieval postural context hastens recognition.

- False Memory: The marginally lower reaction time for matched conditions during explicit recognition of related (lure) words mirrors that of familiar words, indicating that the matching of encoding and retrieval postural context facilitates the speed of false memory.