

**Individual Paper Session 26**  
**Lexicon/Vocabulary**  
**Thursday, July 6**  
**2:15-2:45pm**

### **Depth of Processing Effects in Vocabulary Learning**

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The term ‘deep processing’ ( Craik and Lockhart, 1972) refers to the relative effectiveness of *elaborated semantic* processing for retention of new vocabulary in long-term memory as compared with other, ‘shallow’, processing (such as perceptual feature processing). While intuitively appealing and useful to researchers and learning materials developers, *depth of processing* remains rather poorly defined.

In the study reported here, the construct was applied experimentally to a software system being developed by the author, to determine whether any of various user interactions yielded deep semantic processing and better retention of new vocabulary. The system includes a dictionary definition resource for new words in sentence contexts. The system can provide any number of definitions (for polysemous words), e.g., a simple gloss or multiple definitions, the latter requiring identification from various possibilities the correct definition in a given context and, plausibly, greater depth of processing. Depth of processing was defined operationally in terms of the number of definitions (one to five) which had to be analysed semantically/grammatically before identifying the correct definition for the sentence context. Target words/sentences were rotated around levels of the Definition# condition. In Phase1 subjects were presented with individual sentence stimuli. Each sentence contained a rare polysemous word (the target). Subjects were asked to read each sentence and then identify the correct target definition (from a list) for the given sentence context (one semantically/grammatically correct definition per list). In Phase2 subjects performed recognition/recall tasks for target words/definitions. RTs were measured in Phase1; recognition RTs/recall accuracy were measured in Phase2.

Results obtained thus far<sup>1</sup> showed significantly improved Phase 2 recall accuracy for targets as Phase1 number of definitions increased, but a ceiling effect at three definitions, suggesting a *depth* effect and its limit. Phase2 word recognition speed increased significantly with levels of Definition#, suggesting straightforward time-on-task priming effects from Phase1. Results are discussed in terms of memory models and the author’s software development.

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<sup>1</sup> The study is not yet complete