



UNIVERSITY OF CALIFORNIA
SAN DIEGO

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Lexical Organization, Semantic Memory, and Reading Comprehension

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy in

Psychology

by

Billy E. Vaughn

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- Professor David Rumelhart
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- Professor Roy D'Andrade

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The dissertation of Billy E. Vaughn is approved,
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To

Aunt Barbara,

Dee L. Bunker

Robert J. Bunker

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1986

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Elliot, Elliot Weinstein, Lonnie Anderson, Linda Amerman (God rest her soul), Laura Martin, Ken Traupmann, Shelley Stokes, Judy Smith, Katie King, Mary McGinnis, Sheila Droyles, Lehman Benson, Margaret Armstrong, Charles Cooper, Jim Wertsch, Eileen Conway, and Mark Wallen.

A special thanks to ACKNOWLEDGEMENTS taught me people

microcomputer graphics and other pascal programming tricks. The students who worked with me on this project included Denise Stevens,

Juri Yee. The combination of the department of psychology and the Laboratory of Comparative Human Cognition created a remarkable

environment for me to develop my expertise in Cognitive Psychology. I

owe a tremendous amount to Mike Cole and Peg Griffin for the

construction of a zone of proximal development that allowed me to study mainstream psychology without completely losing my soul. Jean Mandler's

patience and dedication will never be forgotten. A special thanks to

Bud Mehan for his friendship and dependability. Edwin Hutchins and Roy

D'Andrade both helped me discover cognitive Anthropology. As an

undergraduate at this university, my first exposure to cognitive

psychology was in a course taught by by David Rumelhart. I worked with

him closely in a year long course in artificial intelligence during

graduate school. He will never know how much he influenced the direction of my thinking.

There have been many others, mentioned in order in which they entered my life; each have contributed to the social accomplishment of

this task. Alfred Galloway, Norma Johnson, the Gordons, Mrs. Barbara

Dugger Anderson (God rest her soul), the Meyers, David Floyd, Maggie

Elliot, Elliot Weinstein, Lonnie Anderson, Linda Amerman (God rest her

soul), Laura Martin, Ken Traupmann, Shelley Stokes, Judy Smith, Katie

King, Mary McGinnis, Sheila Broyles, Lehman Benson, Margaret Armstrong,

Charles Cooper, Jim Wertsch, Eileen Conway, and Mark Wallen.

A special thanks to Wyatt Casey, who taught me apple microcomputer graphics and other pascal programming tricks. The students who worked with me on this project included Denise Stevens, Juri Yoshida, Ellen Schiller, Peter Kurata, Tom Dougher, Ha Tran, and Cedric Lewis.

Thanks to Dr. John Griffith of the San Diego Unified School District, who permitted me to enter the classrooms at Kennedy and Knox elementary schools. The people at Knox were extremely helpful and understanding. The children in both schools were very patient and diligent subjects. Mt. Erie Baptist church is thanked for its receptiveness. Without the use of their facilities during school holiday and vacation periods, I might still be collecting data.

Lastly, I would like to extend my appreciation to my family. My wife Liz is the most sensitive and understanding person I have come to know and love dearly. Her patience and admiration will be treasured forever. My daughter Lindsay has endured a great deal during my struggle to complete my dissertation. It is obvious that she is a strong person. I love her dearly. David Vaughn is much too young to understand what his father has worked so hard to accomplish for his sake.

ABSTRACT OF THE DISSERTATION

VITA

Lexical Organization, Semantic Memory, and Reading Comprehension

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PUBLICATIONS

A microcomputer task was designed on the basis of a theory of how lexical items can be related and how these lexical organizing factors. Vaughn, B. E. (1985). Computer Networks and Education. The Quarterly Newsletter of the Laboratory of Comparative Human Cognition, 7(4), p. 131.

Vaughn, B. R. (in collaboration with the Laboratory of Comparative Human Cognition) (in press). Cross-cultural Psychology and Education. American Psychologist.

pre-reading instruction, (2) the benefits of presenting the task under speeded constraints, and (3) FIELDS OF STUDY effects of varying semantic structure on lexical organization and reading comprehension. Major Fields: Cognitive Psychology, Cognitive Sociology and Computer Science. Although the literature suggests that recall of thematic lists is

greater than for taxonomic word lists. These results were found in the present study. In addition, semantic list differences did not differentially affect performance on the various tests of vocabulary knowledge and reading comprehension.

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Doctor of Philosophy in Psychology

University of California, San Diego, 1986

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A microcomputer task was designed on the basis of a theory of how lexical items can be related and how these lexical organizing factors facilitate semantic memory, vocabulary instruction, and reading comprehension. The task was employed in a study that examined three issues: (1) the utility of the microcomputer lexical decision task for pre-reading instruction, (2) the benefits of presenting the task under speeded constraints, and (3) the differential effects of varying semantic structure on lexical organization and reading comprehension. Two vocabulary treatments, chosen to contrast varying amounts of speeded instructional constraints, and a control condition were used with fourth graders who were reading at grade level or below. Speed of instruction was studied in interaction with three types of semantic word list structures (taxonomic, thematic, and a mix of the two). The training produced significantly higher scores on two vocabulary tests and one of two reading comprehension measures, indicating that the instruction had a significant effect on both comprehension and vocabulary learning. Although the literature suggests that recall of thematic lists is

greater than for taxonomic lists, no differences were found in the present study. In addition, semantic list differences did not differentially affect performance on the various tests of vocabulary knowledge and reading comprehension.

at the University of Pittsburgh describe word meaning as having structure that varies from shallow to deep. Shallow knowledge refers to word meaning that has a low degree of structure. These words tend to be highly unfamiliar and difficult to retrieve. When we encounter unfamiliar words in a text, comprehension is interrupted and attention is consciously directed to lexical retrieval. Deep word knowledge refers to meaning that has a high degree of structure. These words are "rich" in meaning, highly familiar, and fluently accessed in a variety of contexts. Readers with a rich lexicon that is quickly accessed can direct their attention to comprehension processes and encounter fewer interruptions in lexical access. From this point of view, vocabulary knowledge is considered "instrumental" to reading comprehension (Stahl, 1983).

Beck et al. claim that the development of a "rich" and "quick" vocabulary knowledge requires intensive and extensive practice under conditions that convey word meaning in varied ways, including exercises that require speeded responses. Their instruction presented more exposures per word than found in the typical classroom in order to establish the high degree of structure. These exercises were varied to insure that the structure formed a "richly" connected network of interrelations. Exercises that required learning about words under speeded conditions were considered necessary to facilitate fluency in word knowledge retrieval. Presumably, Beck et al. thought that fluency