

Gernsbacher, M. A. (1985). Contemporary Readings on Cognition: Beyond Serial Boxes [Review of the book *The Psychology of Cognition*, 2<sup>nd</sup> ed., by G. Cohen]. *Contemporary Psychology*, 30(4), 289-290.

# Contemporary Readings on Cognition: Beyond Serial Boxes

Gillian Cohen

The Psychology of Cognition. 2nd ed.  
London: Academic Press, 1983.  
287 pp. \$16.00 (£8.40)

Review by

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My colleague complains of the following predicament. He teaches an undergraduate course in cognitive psychology, and every year he deliberates over which textbook to select. He reviews almost a shelfful of potential books, all with very similar titles save the occurrence of a preposition or two. Even More striking is the similarity of organization among these books. Virtually all begin with chapters that cover "low-level processing" (transient sensory memory

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phenomena). Then they offer chapters that discuss short-term (or some euphemism for short-term) memory phenomena. Nearby is an obligatory chapter on attention. Then it is on to a chapter or two discussing long-term memory phenomena. Finally, each book culminates in discussions of "higher level processing" (language and problem solving). This organization scheme sounds familiar: It follows the presumed flow of information through traditional multi-store models of information processing. This organization scheme also dictates my colleague's course curriculum in a rather ironic way: He selects a textbook only to spend the bulk of the quarter explaining to the students why-despite their textbook's organization-the multistore approach is no longer considered tenable.

Cohen's text offers my colleague, and those in a similar predicament, an organization that goes beyond the serial box models. Despite its not-so-novel title, *The Psychology of Cognition* is organized in a refreshing and unique format. According to the preface this second edition, "like the first edition [published in 1977], is arranged as a set of tutorial essays." Each tutorial forms its own chapter. Though the author did not intend the book to be a survey, the eight tutorials she presents do indeed canvas the prominent and often overlooked areas of contemporary cognitive psychology. The chapters are "Semantic Memory and Structure of Knowledge," "Visual Imagery in Thought," "Concepts and Concept Formation," "Language and Thought: What Is Language?," "Language and Thought: What Is Thinking?," "Problem Solving and Reasoning," "Artificial Intelligence and Computer Simulation," and "Hemisphere Differences."

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Cohen's goal was to write each tutorial so that it could stand on its own. This goal has been met: The reader can pick and choose chapters to read in any order and any combination. In addition to the eight tutorials, there is an introductory chapter, which-forgetting for the moment the pick-and-choose strategy-! strongly recommend as a must.

This introduction epitomizes the most radical change from the first edition. It serves as a foreword and is appropriately titled "Trends and Issues." It replaces the first edition's epilogue, which was titled "Problems with Panaceas." This change perhaps symbolizes Cohen's ability now to appreciate cognitive psychology's development as a paradigmatic field, in a spirit similar to that captured in Lachman, Lachman, and Butterfield's (1979) text.

In this first chapter, five topics are introduced: distinctions such as strategies versus structures, ecological validity, individual differences, methodological advances, and the computational metaphor. These topics are like threads creatively woven through a beautiful tapestry. Though they all appear at various points throughout the book, each topic does not emerge in every tutorial. Sometimes the topics are woven into domains in which their mention may be anticipated: Individual differences are discussed vis-a-vis language (e.g., linguistic relativity); the computational metaphor is discussed in light of semantic memory representation (e.g., Collins and Quillian's [1969] Teachable Language Comprehender); methodological advances are discussed in the tutorial on hemisphere differences (e.g., cerebral blood flow). But sometimes these threads are woven into more novel domains: Ecological validity is discussed vis-a-vis concept formation

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(e.g., studying natural categories); methodological advances are discussed in light of problem solving (e.g., using verbal reports); the distinction between automatic and attentional processing is discussed in the tutorial on artificial intelligence and computer simulation (e.g., modeling with precompiled versus interpreted operations).

This second edition is noticeably updated from the first. Approximately one fourth of the references are from the period following the first edition's publication. The tutorials themselves have been updated to capture contemporary empirical findings and theoretical viewpoints. For instance, the tutorial on visual imagery has been expanded to include discussion of the more recent multiple (not simply dual) coding models; the tutorial on concept formation has been expanded and now reviews developmental studies; in the tutorial on problem solving, coverage of older approaches (Gestalt and stimulus-response) has been replaced by coverage of more advanced approaches (computational); the very good tutorial on computer simulation is now joined to coverage of artificial intelligence, and a section contrasting the two often-confused fields is presented.

Another change is the inclusion of five to ten recommended readings following each tutorial. Many of these recommendations are contemporary Brain and Behavioral Science debates, which should allow students a firsthand look at some current controversies. Other recommendations are classic books (e.g., Vygotsky's *Thought and Language*, 1934/ 1962), comprehensive review chapters (e.g., Simon's 1979 Annual Review chapter), or seminal articles (e.g., Cooper and Shepard's 1973 mental rotation study). These recommendations are given with limited evaluation (usually

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only the age, length, and expected difficulty).

All are well chosen; any instructor would be thrilled if his or her students became acquainted with just a few of these selections

A less desirable change from the first edition is that the cited references are lumped together at the end of the book rather than listed after each chapter. This subtly dampens the spirit of the stand-alone tutorials. Also unfortunate is the removal of the name-author index. Though not crucial to the book's mission as a text, this index did enhance the potential of this volume as a reference book. Finally, the first "Language and Thought" tutorial should rightly be called "Communication and Thought," since the latter title better summarizes the chapter's content.

The hardest thing to appraise about this textbook is what level of student it is appropriate for. The intended reader must surely have some background in experimental psychology. So perhaps the book is appropriate for very advanced undergraduates. Some sophistication about scientific inquiry and modeling would also be helpful. And for this reason, perhaps the book is more appropriate for beginning graduate students. In many ways the text seems to be useful not only for students but also for accomplished scholars in related fields. Surely researchers of social cognition should find the tutorial on concept formation informative; researchers in education should appreciate the tutorial on problem solving; clinical psychologists should find the tutorials on semantic memory and representation and on hemisphere differences instructive. Scholars in cognitive psychology's sister fields, linguistics, philosophy, and computer science, should enjoy a pass through the entire

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book. Whatever their levels, readers will enjoy a bonus beyond the particular content: They will be exposed to an ideal example of clear, sophisticated writing.

Graesser (1982), reviewing textbooks on a similar topic, human memory, said: "In my opinion, an undergraduate text should have an element of romance . . . In a romantic text on memory, the author would present competing theories or hypotheses and would report experiments that determine the winner or winners" (p. 216). Cohen grandly meets these specifications. Indeed, introducing the excellent tutorial on hemisphere differences, she writes, "This chapter will review the particular difficulties that attend each method of investigating hemispheric specialization, summarize the findings, and assess the theories" (p. 224). The subsequent pages fulfill each of these promises. And although *The Psychology of Cognition* may not be as romantic as a dime-store novel, it is bound to beat reading the backs of cereal (or serial) boxes.

#### References

- Collins, A.M., & Quillian, M. R. (1969). Retrieval time from semantic memory. *Journal of Verbal Learning and Verbal Behavior*, 8, 240-247.
- Cooper, L. A., & Shepard, R. N. (1973). Chronometric studies of the rotation of mental images. In W. G. Chase (Ed.), *Visual information processing* (pp. 75-176). London: Academic Press.
- Graesser, A. C. (1982). Another text on human memory [Review of *The psychology of human memory*]. *Contemporary Psychology*, 27, 216-217.
- Lachman, R., Lachman, J. L., & Butterfield, E. C. (1979). *Cognitive psychology and information processing*:

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An introduction. Hillsdale, NJ: Erlbaum.

Simon, H. A. (1979). Information processing models of cognition. *Annual Review of Psychology*, 30, 363-396.

Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.  
(Original work published 1934)