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Book reviews

Perspectives on memory

R.L. Greene, *Human Memory: Paradigms and Paradoxes*. Erlbaum, Hillsdale, NJ, 1992.

A.J. Parkin, *Memory: Phenomena, Experiment and Theory*. Blackwell, Cambridge, MA, 1993.

G.H. Davies and R.H. Logie (Eds.), *Memory in Everyday Life*. North-Holland, Amsterdam, 1993.

N.E. Spear and D.C. Riccio, *Memory: Phenomena and Principles*. Allyn & Bacon, Needham Heights, MA, 1994.

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A cursory glance at the catalogues of recently published books in cognitive psychology makes it clear that the subject of Human Memory is still becoming more and more popular. The four books reviewed here approach the subject from different perspectives. While Greene has opted for a more or less traditional approach to the subject focusing on experimental approaches, Parkin takes a much more theoretical approach. Davies and Logie take a so-called ecological approach, and Spear and Riccio emphasize the continuity between animal and human research on learning and memory.

Although Greene's book is perhaps the most traditional one in terms of the topics discussed, his approach is still a bit unusual. Rather than discussing current (or past) theories or explanations for human memory, Greene takes the approach of discussing current and past experimental tasks or paradigms. In a sense, this is a reflection of the current status of Cognitive Psychology. However, I am not convinced that the preoccupation of researchers with particular tasks or paradigms is really something that is unique to cognitive psychology. Any science develops from controversies surrounding specific phenomena (what we might call paradigms). However, one of the weak aspects of cognitive psychology is that very few of its researchers really seem to be interested in going beyond the paradigms, in trying to develop what might be called 'cumulative science', theories that not just explain the data from one paradigm or task but that aim to provide a satisfactory explanation for the findings obtained in many paradigms, both present and past. As such, this book seems to be written more from a typical researcher's point-of-view, rather than for an audience that is interested in the overall picture.

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A second problem that I had with the treatment of the various phenomena in this book, was the rather traditional and sometimes superficial way in which some of the theoretical accounts are treated (e.g. the way in which the two-store account of recency effects is presented).

The choice of paradigms that are included seems a bit haphazard. For example, it is unclear why Loftus' eyewitness testimony paradigm is included while recognition tasks are not discussed at all. I realize that any choice is bound to be arbitrary but if one does want to present basic paradigms in memory research, paradigms such as cued recall, recognition and lexical decision would be expected to be included.

Alan Parkin's book is one of the best introductory books on memory that I have read in recent years. I really enjoyed the way in which the author discusses the material in the perspective of crucial questions about how memory works. Most importantly, the various issues are introduced and discussed in a way that invites the reader to think along with the author.

The book starts with a thoughtful discussion of primary and secondary memory, followed by a more process-oriented account (levels-of-processing versus transfer-appropriate processing). In the next chapter, procedural, semantic and implicit memory are introduced. The treatment of these topics is more or less in the tradition of the Toronto school (Tulving, Schacter), in which dissociations between memory tasks are generally interpreted as reflecting structural differences, with little attention for more process-oriented explanations. The only chapter that I found a bit disappointing was the one on 'Remembering and Forgetting'. The author fails to discuss any of the more recent approaches to retrieval (especially as applied to recognition), the treatment is limited to a comparison of generation-recognition theories and the encoding-specificity principle. For example, the so-called Tulving-Wiseman law (showing a particular functional relationship, across experiments, between the unconditional probability of recognition and the probability of recognition conditional on correct recall) is discussed although it is quite unclear whether this law really has any implications for the evaluation of generation-recognition and encoding-specificity theories (it is relatively easy to generate this 'law' using any reasonable memory model). Also, little attention is given to the problems surrounding the interpretation of so-called double dissociations. Many authors have pointed to the difficulties in using the double dissociation logic to draw conclusions regarding separate memory systems. Finally, Parkin disregards the evidence, put forward by Ratcliff, that seem to be inconsistent with the notion that priming effects in implicit memory should be explained as a data-driven phenomenon (due to changes in what Schacter and Tulving have termed the 'perceptual representation system').

These initial chapters that treat the basic memory processes, are followed by four chapters that deal with more specialized topics, including imagery, Baddeley's working memory theory, and the development of memory in early childhood and old age. Parkin's treatment of these subjects is adequate but not especially novel or illuminating. All in all, however, I think that this is an excellent textbook that would be very well suited for advanced courses in memory.

A rather different approach is taken by Spear and Riccio. They treat the subject of memory from a psychobiological orientation, which in their case means that they discuss both human and animal research. Compared to other textbooks that discuss animal research, this one is different in that the major emphasis is on memory rather than

learning (although 'learning' is of course discussed). This represents a rather marked change since, until recently, 'memory' was a concept that was rarely used in animal research and was often considered a far too mentalistic term for behavioral analysis. Times have changed, however, not in the least due to many sophisticated animal experiments that have demonstrated the importance of memory factors and that cannot easily be explained without using the concept of memory.

Because of this, the authors spend quite a few pages arguing for the necessity of the concept of 'memory' and the conceptual distinction between memory and learning. However, I doubt that many students will find this discussion interesting or even easy to follow. One quickly gets the feeling that simple issues (such as the distinction between learning and retention) are being made overly complicated, without the benefit, I fear, of a better understanding.

Another conspicuous feature of the treatment of memory by Spear and Riccio is the almost complete absence of a discussion of theoretical models of learning and memory. The authors defend this by referring to the absence of a theory of memory that is generally accepted by all experts in the field. This seems a rather peculiar and restrictive criterion however, that is reminiscent of the a-theoretical attitude that has always characterized Skinnerian analyses of learning and behavior. What is not recognized here, is the important role theories have in showing that certain phenomena do or do not follow from more general principles. In recent years there have been quite a few demonstrations that have shown that such analyses may lead to counterintuitive conclusions. By not paying attention to these theoretical analyses, Spear and Riccio fall in some of the same traps that have troubled older explanations of memory phenomena (e.g., the – false – assumption that in tasks with interfering responses the competition between the responses or memory traces is eliminated if one asks for both responses to the cue, p. 289). This neglect of theoretical analyses applies not just to theories of human memory but, somewhat surprisingly, also to theories that have evolved from animal studies (e.g., the Rescorla-Wagner model for associative learning).

Finally, although this book might be adequate for a course that focuses on animal studies, it definitely would not do for a course on human memory. There are far too many phenomena that are not discussed. For example, serial position curves, the research done by Baddeley and his colleagues on working memory, spacing effects, list-length and list-strength effects, semantic and associative priming, to name a few, are all omitted, yet should, I think, be covered in any course on memory.

All in all, then, this textbook on memory is a bit disappointing. In spite of its more than 350 pages, it does not cover many essential aspects of human memory research. Furthermore, the almost exclusive focus on experimental findings without trying to tie these together within one (or perhaps a few) theoretical frameworks, will make this a rather difficult book for students.

Finally, without doubt the most curious book of all is the volume *Memory in Everyday Life* edited by Graham Davies and Robert Logie. In the introduction the editors write that the aim was to bring together proponents of the experimental, laboratory-based approach to memory and proponents of the ecological memory movement, those that believe that research should focus on memory in everyday life, studying memory in real-life environments and tasks. The so-called everyday memory movement has gained popularity in recent years although there has also been vigorous opposition to

the claim that a ecologically relevant theory of memory can only be developed through studies of memory in real-life environments.

Based on the title of this volume one would have guessed that the various chapters would present clear examples of studies in which memory is indeed investigated in such real-life environments. It would then have been possible to evaluate whether or not such studies really do lead to a different view on memory processes. Oddly enough, that is not really the case. Most of the chapters deal with topics that have little to do with a specifically ecological approach to memory. For example, Rhona Johnston reviews recent research on reading, writing and spelling. The chapter gives an excellent review but it is clear that most of the analyses are based on 'traditional' experimental psychology. Similarly, Logie discusses the current status of the working memory model proposed by Baddeley. This approach is based on very clever experimentation in clearly non-ecological environments. The fact that such studies do have implications for applied issues (and hence for everyday life) shows that there is no reason to assume that there is something fundamentally wrong with the 'ecological validity' of current research in cognitive psychology.

In fact, there seems to be only one chapter that clearly proposes a radical break with the traditional experimental approach to memory. This chapter, written by Martin Conway, can be read as a wild attack on the established psychology of memory (and cognitive psychology in general) or as an elaborate practical joke, making a farce of the ecological approach to memory under the guise of an attack on the methodology of the experimental psychology of memory. I would personally place my bet on the latter. I can't believe that someone that should be well acquainted with the logic of science, would in earnest hold opinions such as that the established psychology of memory (termed by Conway VL, for Verbal Learning) should be likened to a theocracy organized around the bible of Ebbinghaus. What to think of the following quote: "These three tenets, unambiguous method, replicability, and quantitative data, form the central belief system of VL and have been propagated by the high priests of the theocracy as the unquestionable commandments to which all research must submit" (p. 502).

If Conway is indeed serious, this chapter may have been written after a disappointing experience with the peer review process. According to Conway journals try to suppress any papers not conforming to the three commandments mentioned above, using a vocabulary, termed "journalese" by Conway, "an arcane language employed by reviewers and journal editors in the secret rite of anonymous reviewing", in which suppression is called 'rejection'. According to Conway, these commandments lead researchers to disregard meaning and an endless pursuit of trivialities: "One of the spectacular failures of VL is that 'real' effects discovered in the laboratory typically have no obvious or direct implications for cognition outside the laboratory" (p. 507). Excuse me? What about eyewitness memory, spacing effects in training, the role of interference, to name just a few? Not relevant? This can hardly be serious.

So what is the alternative? Ambiguous method, nonreplicability, and only qualitative data? Conway is not very clear about what that might be but he does point to the psychology of everyday memory and autobiographical memory as a possible 'solution'. However, the absence of theory, held by Conway as one of the weaknesses of VL research, seems to be an almost universal characteristic of such 'ecologically valid' enterprises. It should be clear that as soon as alternative explanations arise for various everyday memory phenomena, it will be necessary to conduct controlled research to decide between them.

All in all then, this volume is a quite clear illustration that the idea that Everyday Memory is a radical change from the traditional psychology of memory is a mistake. This is also the main theme that comes back in most of the commentaries (an excellent idea of the editors, by the way). If anything, the present volume shows that current cognitive psychology already has a lot to offer to those that are concerned about the applicability of this branch of psychology.