

Memory Distortion

How Minds, Brains, and Societies
Reconstruct the Past

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Constructive Memory and Memory Distortions: A Parallel-Distributed Processing Approach

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Bartlett (1932) introduced and insisted on the view that memory is a constructive process. His view was essentially that recall is not a retrieval, but a reconstruction, in which aspects of the content of previously presented material are woven into a coherent whole, with the aid of preexisting knowledge. Details may be distorted to increase coherence; rationalizations not present in the original may be introduced; details that are consistent with the synthesized coherent story may be added; and details that are inconsistent may be dropped. Neisser (1967) likened both perception and memory to the constructive activities of a paleontologist, who uses a collection of bone fragments, as well as everything she knows about dinosaurs from previous experience, to reconstruct the skeleton of a particular dinosaur. These ideas are consistent with what we would refer to today as a constraint satisfaction process, in which remembering is simultaneously constrained by traces left in the mind by the event we are remembering itself, by background knowledge of related material, and by constraints and influences imposed by the situation surrounding the act of recollection. Obviously if memory is constructive in this way, this has profound implications for the question of the veridicality of memory and the extent to which it may be influenced by suggestion, preexisting knowledge, and other related experiences.

My interest is in the mechanisms that may implement this constructive, constraint satisfaction process. Remembering, I will argue, takes place in a parallel distributed processing system—a system consisting of a large number of simple but massively interconnected processing units. Processing in such systems takes place through the propagation of activation among the units, based on excitatory and inhibitory connections. Forming a memory trace for something—say, an episode or event—begins with the construction

