are probably not identical, but they all seem to hinge on the idea that the target memory must stand out from an interfering background of other memories.

These "interference–distinctiveness" interpretations have often been applied to the semantic–phonemic difference. It is argued that there are relatively few phonemic features but an abundance of semantic features. Therefore, phonemic features have occurred in more contexts and are subject to greater interference from past knowledge. This explanation seems unsatisfactory, because the assumption of a greater vocabulary of semantic primitives is not well motivated. One could propose a semantic vocabulary of 0's and 1's or a richer phonemic vocabulary. A common problem with these explanations is that a given memory trace is said to be more distinctive than another trace if memory for the first is better; i.e., the explanation tends to be circular.

Earlier we alluded to "the effect of the size of n"—the number of irrelevant propositions emanating from a concept node. The larger n, the greater the interference when looking for a relevant proposition. The need for elaboration of a proposition is less when there is less interference. We believe many of the claims made about distinctiveness can be thought of as differential interference. The results of Eysenck (Chapter 5, this volume) and Nelson (Chapter 3, this volume) are quite consistent with the interference view. However, to show that there is an important effect of interference is not to show that there is not an effect of the other variable in our model, viz., the amount of elaboration. We were forced to this second variable, because it seems clear that there are many phenomena that cannot be accounted for by interference.

Consider the two "dog–chair" paragraphs mentioned earlier. Certainly both are quite distinctive, but the semantic paragraph seems guaranteed to lead to better memory. An even more cogent argument for the insufficiency of the distinctiveness account comes from a memory experiment by Goldstein and Chance (1971), where the materials were pictures of faces and of snowflakes. Both types of stimuli were quite distinctive and discriminable. If anything, the features that define snowflakes are more unique and suffer less interference from other knowledge. However, memory for the faces is much better, presumably because subjects are able to attribute meaning to these stimuli (i.e., elaborate upon the stimuli). The more meaningful the stimuli, the greater the propensity to generate elaborations.

Memory for pictorial material is a particularly good domain to make the case for elaboration. Pictures are so rich in details that distinctiveness per se would seem unimportant. Bower and Karlin (1974) demonstrated better memory for faces processed under a "deep" orienting task (judgments of likability) than when processed under a "shallow" task (judgments of sex). Similarly, Bower, Karlin, and Dueck (1975) demonstrated that subjects' memory for droodles (ambiguous cartoons) was better when a meaningful interpretation was applied to the material. Given the high distinctiveness of the stimuli to be learned, we feel that these depth-of-processing results clearly implicate an explanation in terms of richness, or number, of elaborations in the memory code.