

Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life. (Bransford, 1979, pp. 134–135)

None of the sentences in the above paragraph seems particularly difficult to understand, but together they do not make much sense. Bransford and Johnson (1972, 1973) and Dooling and Lachman (1971) found that without benefit of the theme, "washing clothes," subjects had difficulty comprehending and remembering the passage. Similar effects also have been demonstrated with pictures providing the theme (Bransford & Johnson, 1972), and Bransford (1979) argued that appropriate verbal knowledge can support the understanding of physical features of stimuli as well. For example, the flat blades of a dressmaker's shears might go unnoticed without the knowledge that they enable cutting on a flat surface. Finally, new, thematically consistent information is often falsely recognized as having been previously presented (Sulin & Dooling, 1974; Royer, Perkins, & Konold, 1978). This phenomenon was discussed earlier in the chapter as providing evidence for meaningful learning. Recall that learners are assumed to integrate new information within a related cognitive structure. "Remembering" information that was inferred rather than actually experienced has also been taken as evidence of active brain processes (National Research Council, 2000) and suggests a link to research discussed in Chapter 8.

In addition to gist and theme, the amount of prior knowledge possessed by learners and their interests can affect their interpretation and recall of information as well as their ability to solve problems. Chiesi and co-workers (Chiesi, Spilich, & Voss, 1979; Spilich et al., 1979) demonstrated that subjects who knew a lot about baseball were able to remember much more from a summary of a baseball inning than were subjects who knew little about the game. Similarly, Chi (1978) replicated the results of Chase and Simon (1973a, 1973b) with findings that expert chess players outperformed novices at recalling the positions of chessmen on the board. Finally, Anderson (1977) reported a study in which an ambiguous passage that could be interpreted in terms of playing cards or playing music was read to music students. As might be expected, students with an interest in music interpreted the passage to be about music and were unaware that the passage could be interpreted any other way.

This effect of perspective on learning and memory was also demonstrated by Pichert and Anderson (1977) and Anderson and Pichert (1978). In their studies, individuals were asked to read a passage describing two boys playing in front of a house. Half the subjects were told to read the story from the perspective of a real estate agent, while the other half were to adopt the perspective of a burglar. As predicted, perspective affected recall. That is, the real estate agent subjects remembered details about the number of rooms and condition of the house, whereas the burglar subjects remembered details about valuable objects and the isolation of the house from surrounding

neighbors. But then they adopt the alternate perspective, and the information is reprocessed from this, and indeed the perspective of the prior knowledge, was

The Nature of Schemata

A schema is "a data structure in memory" (Rumelhart, 1980). Schema theory is a theory of representation facilitating learning. There are schemata for underlying objects, sequences of actions" (Rumelhart, 1980). Aspects of schemata, Rumelhart (1980) has written a very simple example. There must be a container, and will use, a container, and will occur. Rumelhart (1980) much like this description of the beating, what implies, this amounts to words, the schema was are typically constrained by the example, and egg-beating example.

First, schemata are associated with different contexts, settings, actions, and so on. Rumelhart (1980) has written a very simple example. There must be a container, and will use, a container, and will occur. Rumelhart (1980) much like this description of the beating, what implies, this amounts to words, the schema was are typically constrained by the example, and egg-beating example.

Schemata are like phenomena surrounding them. They allow us to make predictions about the future. "The total set of schemata constitutes our internal model of the world" (Rumelhart, 1980). Making inferences about the world is a key part of learning. For example, if you mentioned what tool was used to beat an egg, that gap with the default assumption is an egg beater, hand mixer, or other tool. Asked later what tool was used to beat an egg, you might make initial guesses for variables