event, regardless of whether the features are semantic or nonsemantic. Thus, Eysenck's results are more consistent with a distinctiveness explanation.

**ORGANIZATION**

Another important encoding process is **organization**, which is the process of grouping discrete, individual items into larger units based on a specific relationship among the items. Suppose you are given the common laboratory task of remembering a list of words. Among the words are *dog, cat, camel,* and *tiger*. You detect the relationship among the four words and organize them under the category *animal*. A considerable amount of research has demonstrated that such organizational processing facilitates long-term memory.

**Material-Induced Organization**

The majority of laboratory studies of organization and event memory use **categorized** word lists. The lists consist of words drawn from the same natural category, such as *dog, cat, horse, pig,* and *cow* from the category *animal*. In most experiments, several categories are used to represent the words: for example, a list might contain 20 words having 4 words from each of five categories. Compared to uncategorized lists, participants remember categorized lists very well.

Furthermore, categorized lists are better remembered when presented in **blocked** form than when presented **randomly**. In blocked presentation, all of the items from a particular category are presented one after another before items from another category are presented. With random presentation, the items from different categories are mixed in the presentation order. The superior memory for blocked presentation again suggests the important role of organization in memory, because blocked presentation is much more organized than is random presentation.

Further indication of the importance of organization is obvious from the finding of active rearrangement of randomly presented lists. Even though items from various categories are presented in random order, participants group the items into their appropriate categories at recall. That is, the items are recalled by category in spite of having been presented randomly. This regrouping is known as **clustering in recall** (Bousfield, 1953). Clustering is an important indication of the active encoding process of organization in that the materials are rearranged from the random presentation order to an organized output order.

**Subjective Organization**

Organizational effects are obvious when categorized lists are compared to uncategorized lists, but careful examination of performance on uncategorized lists also reveals persuasive evidence of organizational activity. When participants are
asked to remember lists of words unrelated in any obvious way, they find idiosyncratic relationships that result in consistent output groupings. Although clustering scores based on prespecified category grouping cannot be obtained from uncategorized lists, Tulving (1962) outlined a method for detecting organization of presumably unrelated lists. Tulving’s measure of subjective organization requires multitrail recall. That is, participants receive several presentations and recall tests of a list. Subjective organization is measured by the consistency of output order over the recall tests. As the tests progress, the order in which the words are written on the tests becomes more consistent. The particular order differs for different individuals, since the groupings are based on idiosyncratic relationships. Nonetheless, subjective organization is an impressive indication of the prevalence of organizational activity in encoding.

Subjective organization is yet another example of using previous knowledge to interpret a current situation. Individual experiences allow us to relate the apparently unrelated words and to bring order to an otherwise chaotic event. Analogous situations exist in everyday experiences, perhaps more commonly than not. When we are confronted with actions that seem to make little sense, most of us try very hard to bring whatever information possible to bear on such situations to interpret and organize them. Consequently, the discrepancies among different persons’ memory for the same event are not at all surprising. Because of differences in knowledge, an event may be organized and remembered in very different ways by different observers, just as different persons subjectively organize unrelated lists in very different ways.

THE PARADOX OF ORGANIZATION AND DISTINCTIVENESS

We now have discussed research indicating that memory benefits from distinctive processing and that memory benefits from organizational processes. These facts are well established and perfectly consistent with our intuitions, but on close inspection these facts appear paradoxical. Distinctive processing refers to the encoding of differences among events, and organization refers to the encoding of similarities among events. Distinctiveness and organization seem to be diametrically opposed prescriptions for good memory.

One resolution of this apparent dilemma is to assume that both types of information are important to memory (Hunt & McDaniel, 1993). Some evidence suggests that this is the case. Consider the following experiments reported by Epstein, Phillips, and Johnson (1975) and by Begg (1978). Participants were given either highly related word pairs (beer-wine, for example) or unrelated word pairs (beer-dog, for example). For each pair, the participants had to list either the similarities between the members of the pair or the differences between the members of the pair. Memory for the pairs was then tested. Related pairs were better remembered when participants oriented to the differences between the words.