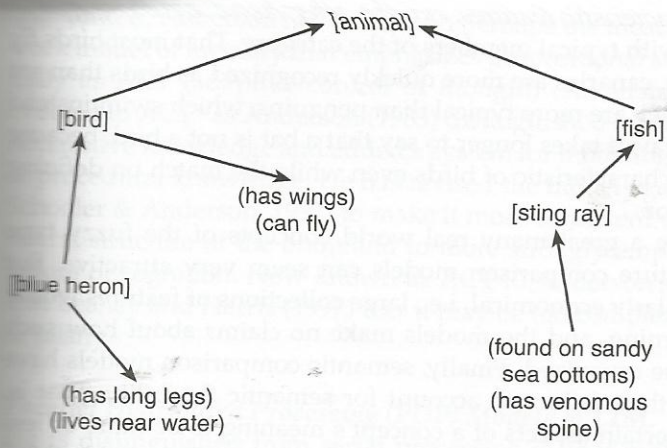

FIGURE 3.7 ***A Partial Network Representing Concepts Associated with Animal, in the Tradition of Collins and Quillian (1969)***

only one pointer; in the second case, two pointers, or levels of memory, are searched.

Predictions such as these were, in fact, confirmed by Collins and Quillian (1969), providing experimental support for the network models. But they also encountered some troubling findings. Subjects more quickly recognized a canary as a bird, for example, than a penguin as a bird, yet recognition times should be equal since the distance in both cases is the same. Typicality of concepts, then, presented a real difficulty for network models, which was to be overcome by feature comparison models of long-term memory.

Feature Comparison Models of LTM. Smith, Shoben, and Rips (1974) proposed that concepts in memory were not stored in interconnected hierarchies, as suggested by network models, but with sets of defining features. Association to other concepts is then accomplished through a comparison of overlapping features, hence, the label feature comparison models. For example, to verify "A blue heron is a bird," an individual would search all the characteristics of *blue heron* and all those of *bird,* and finding a sufficient overlap, would say the sentence is true.

Feature comparison models nicely explained the typicality effects so troubling to network models. Some concepts simply do not have clearly defined members; they are "fuzzy sets" in which some members are better examples of the concept than others. Thus, feature comparison models distinguished between defining and characteristic features. Defining features are those that a bird, for example, must have in order for it to be classified in