review). We make the corresponding assumption for feature parsing: a basic-level for identifying psychologically relevant features, a level which achieves generality while avoiding vagueness. Our dependency relations lie between these "basic" features (see Figure 1 for examples).

We take dependency relations to be very general representational elements. Every directional, semantic relation between features can be treated as a generic dependency relation. Presumably, like all relations, they can be formed in either of two complementary ways, through learning of featural covariation or through a process of explanation. The relative contribution of these two sources of knowledge is as yet unknown. To the extent that dependency relations do reflect people's explanations of objects and events, we might appeal to intuitive theories to account for mutability judgments. Such theories would define central features as those on which explanations for our common interactions with objects and events depend, explanations whose force can be represented as an associative strength.

The strategy adopted by this essay is to cover as much empirical ground as possible with minimal theoretical edifice. We attempt to analyze a key attribute of conceptual structure using only an iterative, linear combination of asymmetric dependency strengths. The use of such simple parallel computations is probably limited to fast, associative processing. Conclusions that require slower, more deliberative and analytic, rule-based processing depend on specific attributes of the relevant relations, like their label, level of abstractness (Clement & Gentner, 1991), and projectibility (Goodman, 1955).[4] In other words, we propose that early access to concepts ignores the content of relations; only slower processing makes use of it. One cognitive activity that involves such slow processing is the *explicit* application of (naive or sophisticated) scientific theories to categorization. Although people sometimes have access to explanatory principles that make categories coherent (e.g., Murphy & Medin, 1985; Rips, 1989), our model suggests that those principles do not directly govern judgments of mutability. Our claim is that, when used to make quick judgments not requiring justification, the cognitive system processes multiple generic dependency relations in parallel.

Measuring Dependency Relations

To test the model, we use it to derive centrality values (the vector C). C should be highly correlated with our participants' immutability judgments. To derive C using Equation (1), estimates of matrix D are required. To obtain such estimates, a group of 20 Brown University students were shown, simultaneously, all the features of a particular category from the previous study. Each feature was inscribed in a circle and participants were asked to draw arrows from each feature to every other feature that they believed the feature depended on, creating a graph like those shown in Figure 1. Three different colored markers were used to indicate the strength of the dependency. The weakest links were assigned the value 1, medium links 2, and the strongest links 3. Instructions were clarified using a graph of the category "12," with mathematical features like "can be divided by 6."