Conceptual Change and Other Varieties of Cognitive Development: Some Distinctions in the Emergence of Biological Thought

Frank C. Keil
Department of Psychology
Cornell University
Ithaca, New York
keil@tc.cornell.edu

Abstract

Conceptual change is generally proposed to occur in one of three ways: 1. constant evolution of new conceptual structures out of older ones such that all traces of the original may eventually disappear, 2. creation of new concepts out of old ones wherein the old remain intact, and 3. emergence of new concepts from pre-conceptual states via general learning procedures. The actual incidence of these kinds of change, however, may be overestimated at the expense of two other patterns of cognitive development. One type involves changing access to already present explanatory systems, often through a reframing of what properties and relations are considered most relevant. Whether to call this process conceptual change is controversial, as the basic systems of explanation may be constant throughout. The other type involves a range of mechanisms that are not conceptual change in any normal sense of the word, but rather increasing accretion and/or differentiation of knowledge within a highly stable and regular conceptual structure. Not surprisingly, details of all these views depend greatly on models of what concepts actually are; and a particular view of concepts and its implications is discussed. These issues are explored with examples from the realm of biological thought.