

CENTER FOR COGNITIVE SCIENCE
University at Buffalo, State University of New York

Wednesday, September 15, 2004

280 Park Hall
North Campus
2:00 pm –4:00 pm

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**“Concepts and Classifications
in the Gene Ontology”**

Since a couple of years there exists on the web the Gene Ontology (<http://www.geneontology.org/index.shtml>). The Consortium behind it says that its goal is “to produce a structured, precisely defined, common, controlled vocabulary for describing the roles of genes and gene products in any organism.” In my talk, I will show that this classificatory effort displays two features of general importance for cognitive science. First, it shows implicitly how hard it is to keep – in practice – a concept and its extension distinct. Second, and more importantly, it deviates from traditional Aristotelian-Linnaean non-evolutionary taxonomies of animals, plants and dead matter. In the latter, it is required that subordinate concepts are subsumed under only one superordinate concept on the overlying level, but the Gene Ontology allows explicitly a concept to be multiply subsumed; it allows so-called “multiple inheritances.” I will argue that this fact shows the need to analyze in more detail a seldom noted distinction between “subsumption” and “specialization.” From a purely linguistic-sentential point of view, this distinction corresponds to the fact that sentences of the form “P is ϕ -ing” (example: “Paul is running”) can have to two different kinds of relations to sentences that are more precise and specific. When “P is ϕ -ing” has been specified by means of an adverb, as in “P is ϕ -ing fast,” the relation between the sentences corresponds to that of subsumption, whereas the relation between “P is ϕ -ing” and specifications such as “P is ϕ -ing on Y” (“Paul is running on the road”) and “P is ϕ -ing at midnight” are claimed to correspond to that of specialization.

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