Language Science Colloquium 2018-19

Monday, March 11th
Time: 11:00-12:30 pm
Location: Social Sciences Plaza, Building-B, Room 2214
Lunch provided.

Mark Steedman, School of Informatics, University of Edinburgh

The Combinatory Cognitive Science of Language

What would any red-blooded cognitive scientist require from a theory of grammar? Presumably, they want it to be efficiently and incrementally processable, and to allow any human language to be easily learnable by children from mere exposure to a reasonably fair sample of (possibly ambiguous, possibly noisy) utterances in (possibly ambiguous, possibly noisy) real-world contexts. The latter requirement in turn requires the closest possible relation between the structure of the grammar and a homomorphic pre-linguistic conceptual language whose nature and origin is largely hidden from us, but which raises important questions about its evolutionary origin in non-linguistic cognition.

Combinatory Categorical Grammar (CCG) fulfils these requirements by departing from standard linguistic assumptions in a number of ways. Most notably, it eliminates all forms of syntactic movement, copying, deletion, or other "action at a distance", reducing them all to adjacent merger of non-empty categories pairing a syntactic type with a logical form by semantically compositional monotone combinatory rules. In particular, CCG is radically lexicalized, so that all bounded constructions such as raising and control are defined in the lexical entry for the head or governing category, so that all relations attributed to "A-movement" and "phasal" boundaries are determined in the corresponding lexical logical forms. Unbounded relations such as topicalization and relativization are then mediated by combinatory rules of function composition, which have the effect giving everything within the scope of "A'-movement" the status of a constituent. Complete theories of the syntax and semantics of coordination and of intonation structure and its interpretation as information follows immediately from this combinatory move, and the radically generalized notion of constituency that it engenders.

I will spend as little time as I can get away with on the formal details of CCG, and concentrate instead on its implications for sentence processing and language acquisition by human and machine, including the implications of recent neural computational methods, and for the emergence of language in the course of cognitive evolution.

RSVP Patty Jones at: patty.jones@uci.edu