

Language and Logic: an impending implicit Turn?

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The formalization of linguistic meaning has been one of the dominant concerns for much of the foundational work in modern logic, which has been based on conscious, explicit assumptions. In the decades since Montague, model-theoretic approaches have moved from the Fregean static view to dynamic models that incorporate aspects of context such as anaphora (e.g. Kamp's Discourse Representation Theory, Groenendijk and Stokhof's dynamic logic).

However, this process continues to separate the content of propositions, which are viewed as empirical, from the process of composition which is the domain of formal semantics. Thus, the truth-conditions of atomic predicates ("does dog (Fido) hold?"), are left to psychology, where such decisions are increasingly understood to involve cognitive processes that may involve tacit knowledge. A modern approach to grounded modeling of language builds on this distinction - it attempts to model the content of such predicates via implicit functions learned from grounded examples in a sensorimotor space. Then the composition is given by second-order logics typical of post-Montagovian analysis.

In this work in progress, we highlight that meaning is also inherent in composition, and identify some complexities which have the potential for causing wide-ranging changes in formal semantics. Building on ideas from cognitive linguistics, we demonstrate how vagueness may intrude in the compositional process, using two example domains: a) compound verbs in English and Hindi, and b) residual compositionality in idiomatic expressions. We argue that fine discriminations of grammatical aspect may demand a more flexible treatment than permitted by composition of Boolean predicates. In terms of formal semantics then, will the "dynamic turn" be followed by an "implicit turn"?