

### Modelling Figurative Meaning using Expectations of Normality

Figurative meaning such as is found with metaphors and similes is ubiquitous in natural language, both as novel creative novel expressions and as frozen expressions whose figurative component may not be immediately apparent (Hobbs 1990).

However, the figurative component of these assertions has eluded formal approach. The existence of figurative meaning is sometimes denied altogether, or at least its derivation and explanation is excluded from the domain of a theory of meaning (e.g. Nunberg 1977; Davidson 1979; Lepore & Stone 2010). Alternatively, figurative meaning is sometimes treated as a way to “repair” an utterance whose interpretation is somehow defective (e.g. Grice 1975; Searle 1979). The approach I present in this paper instead aligns with the views of Hobbs (1990), Hills (1997), Camp (2003) in treating figurative meaning as a crucial component of natural language interpretation that allows for analogical reasoning. My approach aligns particularly well with Relevance Theory (Sperber & Wilson 1986; 1995; 2008; Wilson & Sperber 2004; Carston 2015), and can itself be considered a formalization of the relevance-theoretic account of figurative interpretation, though I do not commit myself to the broader claim that relevance drives all pragmatic processes.

I posit a *normative* interpretation  $[\cdot]$  for expressions in natural language which works alongside the usual *referential* interpretation  $\llbracket \cdot \rrbracket$ . While the referential interpretation maps an expression to its extension/intension, the normative interpretation instead maps the expression to the set of *normal expectations* that are associated with it (Yalcin 2016; see also Kratzer 1981; 1991). For instance, the referential interpretation of “snake” is the formula given in (1), and the normative interpretation is given in (2).

(1)  $\llbracket \text{snake} \rrbracket = \lambda x[x \text{ is a snake}]$

(2)  $[\text{snake}] = \{\lambda x[x \text{ is a snake}], \lambda x[x \text{ is a reptile}], \lambda x[x \text{ has no legs}], \lambda x[x \text{ is deceptive}], \dots\}$

The normative interpretation is essentially an approximation of a cultural stereotype associated with a term, and may thus contain information does not connect directly to reality (e.g. “snakes are deceptive” in the example above). The referential interpretation of an expression is always a member of its normative interpretation, and the expressions within the normative interpretation all share a type, allowing normative interpretations to be pairwise-composable (composition of pairs in a Cartesian product, a la Hamblin 1973).

The fact that the members of the normative interpretation of an expression are *violable* is precisely what allows departures from the “literal” or referential meaning of the expression by means of a unified non-monotonic interaction with discourse structure. This unified interaction is responsible for both literal and figurative contributions to a discourse, thus allowing figurative interpretation to be available ubiquitously without being a form of repair. I formalize this interaction using a greatly simplified model of discourse consisting of a Common Ground and a set of Questions Under Discussion (Hamblin 1973; Stalcker 1978; Roberts 1996), and then define a proposition as *relevant* in a discourse context iff a) it does not contradict the Common Ground and b) it provides a partial or full answer to a Question Under Discussion. This allows the *discourse contribution* of an utterance in a given discourse context to be defined as the subset of propositions in its normative interpretation that are relevant in that discourse context.

I demonstrate with a number of examples that this setup can automatically derive literal and figurative discourse contributions, and in fact that the only difference between literal and figurative readings is whether or not the referential interpretation of the utterance is relevant in the given context and therefore a member of its discourse contribution.

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