

Conceptual dynamics of negation and its use

It has been a matter of an intense debate in linguistics, psychology and philosophy how negated concepts are mentally represented and how negation is integrated into the sentence meaning, thereby adding yet another aspect to the more general interdisciplinary debate on concepts, their representation, acquisition and use in communication. With regard to mental representations, negation challenges embodied and situated theories of language and cognition, leading to the question of how something that is negated can actually be simulated.

Despite its logical precision, negatives are less precise on the semantic and on the pragmatic level due to their possible semantic ambiguity and their pragmatic presupposition. In everyday conversation, negation does not only exclude the denotata of the predicates it takes scope over but furthermore, it licenses the truth of an alternative affirmative assertion, i.e. the negation of a predicate suggests that one of a set of alternatives holds (cf. alternate implicatures, Horn, 1972). Plausible alternatives are usually events or objects that tend to occur in similar contexts because elementary negation is typically used to contrast one situation with another one that is very close to it (Fauconnier, 1999). Hence, contrasting words and phrases - such as for example negatives and their opposing affirmative(s)- are claimed to be as similar as possible (Oaksford & Stenning 1992). This leads to the question how the implied affirmative counterpart of a negative concept might be selected out of a large pool of potential candidates and how this “communicative information” is mentally organized - or rather categorized.

Despite the observations of the above mentioned conceptual proximity between a negation and its implied alternatives, it is still difficult to describe their similarity. Yet, finding a way to do so can inform the more general debate on concepts and their representation but can help to develop empirical studies that can test their use empirically as well. Regarding that aspect, I hypothesize that the optimal candidate for the implied alternative of a negation shares a maximum amount of features with the negated entity/situation, yet differs in at least one feature, thereby leading to a gradual pre-activation of concepts in a semantic network. This hypothesis and the evolving framework around it are largely influenced by the notion of conceptual spaces of Gärdenfors (2010, 2017) and the idea of dimensions and domains to structure them. Hence, applying Gärdenfors’ terminology, the optimal candidate can be found within the same domain as the negated entity but differs with regard to one of its dimensions. The structure of semantic networks is especially relevant for the representation and comprehension of negation, especially with regard to the economy of our cognitive system.

References

- Fauconnier, G. (1999): Creativity, simulation, and conceptualization. Commentary to Barsalou’s “Perceptual Symbol Systems”, *Behavioral and Brain Sciences*, 22(4).
- Gärdenfors, P. (2010): *Conceptual Spaces: The Geometry of Thought*. MIT Press. Cambridge, MA.
- Gärdenfors, P. (2017): *The Geometry of Meaning: Semantics based on Conceptual Spaces*. MIT Press. Cambridge, MA.
- Horn, L (1972): *On the Semantics of Logical Operators in English*. PhD thesis, UCLA.
- Oaksford, Mike and Keith Stenning (1992): Reasoning with conditionals containing negated constituents. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18(4):835.