

## Can the Phenomenological Psychophysics of Opposites contribute to the understanding of Negation?

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Negated propositions are assumed to evoke two contrasting spaces, a factual and a counterfactual space (Fauconnier & Turner, 2002; Hasson & Glucksberg, 2006; Giora et al., 2005). It seems reasonable to wonder if the shape of these two contrasting spaces depends on the structure of the properties under consideration. In other words, can we predict what subjects mean when saying “not straight” or “not curved”, “not near” or “not far” based on the structure of the dimension to which the negated property belongs?

A similar hypothesis was at the basis of Paradis and Willners’ (2006) experiments investigating the interpretation of negation with antonymic adjectives in Swedish. The authors’ hypothesis that when *not* combines with bounded antonymic meanings its function is that of expressing the absolute opposite meaning (e.g. “not dead” equals “alive”) while when *not* combines with unbounded antonymic meanings (e.g. “wide” and “narrow”) its function is to attenuate the meaning of modified adjectives, was only partially confirmed.

*Our hypothesis:* Can the descriptive use of negation be better predicted if we consider the types of opposites emerged from the application of phenomenological psychophysics methods (see Bianchi & Savardi, 2008; Savardi, Bianchi, Kubovy, *in preparation*)?

*The research:* The same kind of task used by Paradis and Willners (2006) was applied to different pairs of opposites, belonging to 4 different types.

*Results:* Despite the fact that responses depended in part on the specific event being considered, specific biases emerged with pairs which had a similar structure:

a) With OIC pairs (pole A *Open interval*, intermediate region *Interval*, pole B *Closed interval*), negation applied to one of the two poles describes a property belonging to the internal section of the opposite pole, around the intermediate region (top bar, Figure 1).

b) With ONP pairs (pole A *Open interval*, no intermediates, pole B *Point*), negation applied to one of the two properties refers to the extreme state of the opposite pole. This is particularly true when the negation is applied to the pole consisting of an interval (middle bar, Figure 1).

c) In pairs with two intervals (closed or open) and a single intermediate property (i.e. CPC: pole A *Closed interval*, intermediate region *Point*, pole B *Closed interval*), negation moves towards the intermediate region of the dimension (bottom bar, Figure 1).

These indications need to be further investigated, but they suggest that phenomenological psychophysics may contribute to the understanding of negation.

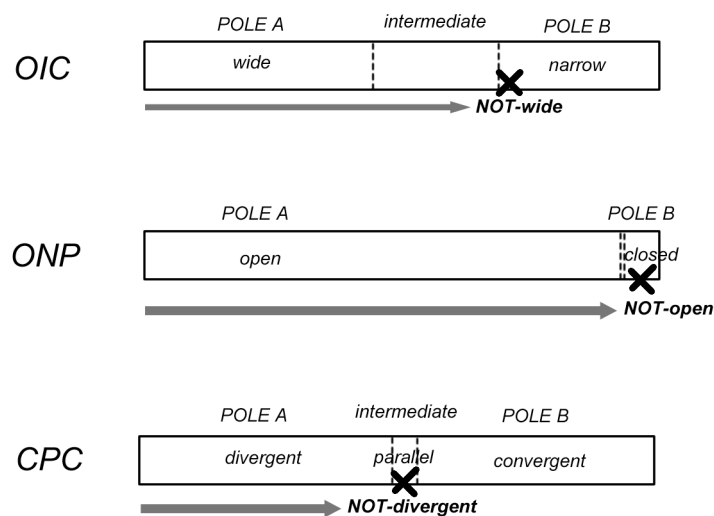


Figure 1

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