Understanding metaphors in object positions: A test of competing processing theories

Camilo Rodríguez Ronderos
camilo.ronderos@hu-berlin.de
Humboldt-Universität zu Berlin

How do we understand the meaning of novel metaphors? Extant approaches to answering this question can be broadly grouped into two views. The first, `Implicit Comparison View' (ICV), claims that metaphors such as *my cat is a princess* (where 'cat' is the topic and 'princess' the vehicle') are understood through a process of analogical reasoning in which all elements of a metaphor are initially scanned for relational similarities (Coulson & Oakley, 2005; Wolff & Gentner, 2011). A second view, the `class inclusion model' (CIM) approach, sees metaphor comprehension as a modulation of the lexical meaning of the metaphoric vehicle (Glucksberg, 2001; Mcglone & Manfredi, 2002; Sperber & Wilson, 2008).

A prediction that sets these theories apart relates to whether topic and vehicle are processed symmetrically: ICV claims that both elements are initially processed equally, while CIM claims that the elements are processed differently and play fundamentally different roles.

The current experiment tested this by making use of the properties of German syntax, which can alternate from an SVO to an SOV surface sentence structure in the presence of an auxiliary verb. This allowed us to construct metaphoric expressions in which the vehicle is in the object position and the topic-related verb either appears before (verb-second condition) or after it (verb-final condition), such as in the example <u>target sentence</u> in (1):

(1a) Sebastian füttert TOPIC-RELATED eine Prinzessin VEHICLE.
(1b) Sebastian wird eine Prinzessin VEHICLE füttern TOPIC-RELATED.

'Sebastian feeds/will feed a princess'

In the experiment, 32 participants saw 36 items. In every trial, they first read 4 sentences that either biased towards a literal or a metaphoric interpretation of the target sentence (literal interpretation: Sebastian is feeding a noble woman; figurative interpretation: he is feeding a very spoiled cat). They then heard the target utterance (1-a or b) while looking at pictures, two of which represent the literal and the metaphoric interpretation of the sentence respectively. Participants' eye movements to these pictures were recorded.

The main results, depicted in the graph below, showed that when hearing the metaphoric vehicle *Prinzessin* in (1b) (region 1 in the graph), participants looked significantly more at the picture of the literal princess than at the picture of the cat. However, in (1a) there was no clear viewing preference for either literal or metaphoric picture upon hearing the metaphoric vehicle (region 2). This suggests that participants processed the metaphor differentially depending on whether they had heard the lexical verb before or not: It is likely that in (1b) participants retrieved the encoded meaning of *Prinzessin* to great depth, whereas in (1a) only enough features of the encoded literal meaning where necessary to construct the intended metaphoric meaning. The results are therefore more compatible with theories that view the understanding of novel metaphors as an asymmetric process, such as the CIM.
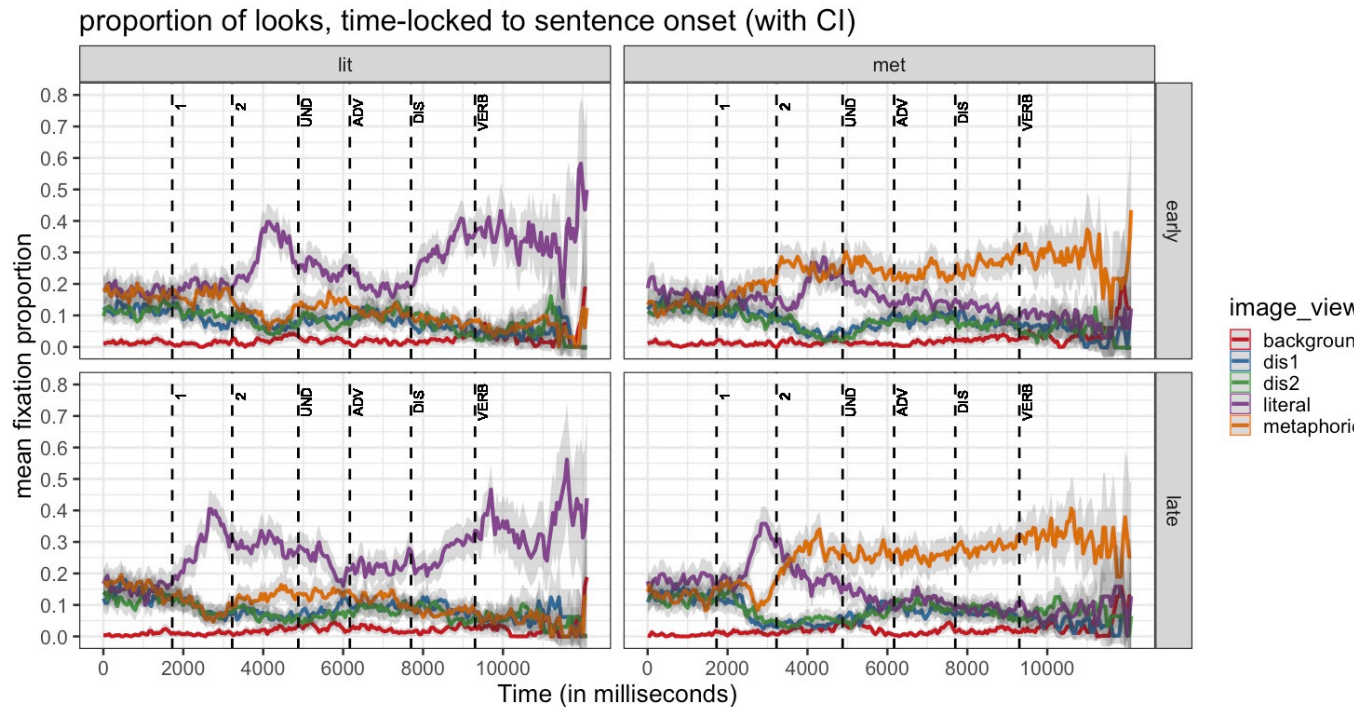
Figure 1: proportion of looks to the different images on the visual grid. The Images on the right show the metaphoric conditions. Images on the left the literal conditions.

References

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