The laboratory discovered: Place-for-institution metonyms appearing in subject position are processed as agents

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Metonymy is a type of figurative language in which an entity is referred to by a salient characteristic of the entity. For example, in place-for-institution metonymy, as in (1), *college* can refer to a literal physical place (1a) or can be used figuratively to refer to the people associated with the college (1b). Although metonymy is extremely common in everyday language, it is relatively understudied in the psycholinguistic literature, and the research to date presents an unclear picture about how metonyms are processed. Whereas early work suggested that familiar metonyms are processed just as quickly as literal expressions (e.g., Frisson & Pickering, 1999), more recent research suggests that the grammatical role of the metonym can have a large effect on the relative ease or difficulty of processing. For example, Lowder and Gordon (2013) showed that readers had greater difficulty processing familiar metonyms in their figurative sense (1b) versus their literal sense (1a), but only when the metonym was in a focused syntactic position (i.e., object of the verb). In contrast, when the metonym appeared in a defocused position (i.e., part of an adjunct phrase), the processing difference was eliminated.

Metonyms can also appear in subject position in sentences where there is no preceding context to point the comprehender toward a literal or figurative interpretation. Fishbein and Harris (2014) examined the processing of these structures using producer-for-product metonyms as a test case, as in (2). Readers experienced greater difficulty when the metonym was used in its figurative sense (2b) than its literal sense (2a). Fishbein and Harris interpreted this pattern as supporting a "Subject as Agent Principle," according to which the comprehender immediately assigns sentence subjects the thematic role of agent. In the case of producer-for-product metonyms, this leads to immediate selection of the literal, animate sense of the metonym, as opposed to its figurative, inanimate sense. In the current study, we conducted two eyetracking-while-reading experiments that examined whether similar effects would emerge for place-for-institution metonyms. In contrast to producer-for-product metonyms, place-for-institution metonyms are inanimate in their literal sense but animate in their figurative sense. Thus, if comprehenders have a bias to interpret place-for-institution metonyms that appear in subject position as agents, they should experience difficulty if the structure of the sentence later indicates that the metonym should be assigned the role of patient (i.e., a garden-path effect).

In Experiment 1, participants ($n = 44$) read sentences like those in (3), in which we systematically manipulated whether the sentence subject was a familiar metonym or an inanimate noun without a figurative sense, as well as whether the structure of the sentence was temporarily ambiguous or not. Analyses of regression-path duration and second pass time on the disambiguating by-phrase revealed significant interactions such that there was a large garden-path effect in the metonym condition but not in the inanimate condition. This pattern suggests that readers had a strong tendency to initially select the figurative sense of the metonym and assign it the role of agent. In contrast, there was no available agentive sense for the inanimate subjects. In Experiment 2, participants ($n = 40$) read sentences like those in (4), in which the inanimate condition from Experiment 1 was replaced by an animate condition. Analyses of regression-path duration and second pass time at the disambiguating by-phrase revealed a robust main effect of sentence structure indicating garden-path effects for both the metonym and animate condition. There was no hint of an interaction in any measure, suggesting that the magnitude of this effect was equivalent regardless of whether the sentence subject was animate or was a metonym.

The results provide further support for a Subject as Agent Principle in the processing of metonymy. In the case of place-for-institution metonyms, this heuristic prompts the comprehender to immediately access the figurative sense of the metonym and later revise this interpretation if necessary.

(1a) Sometime in August, the journalist photographed the college after he had… (Literal)
(1b) Sometime in August, the journalist offended the college after he had… (Figurative)

(2a) As planned, Kafka was contacted by the publisher shortly after the... (Literal)
(2b) As planned, Kafka was printed by the publisher shortly after the... (Figurative)

(3a) The hospital requested by the doctor was not… (Metonym, Ambiguous)
(3b) The hospital that was requested by the doctor was not… (Metonym, Unambiguous)
(3c) The equipment requested by the doctor was not… (Inanimate, Ambiguous)
(3d) The equipment that was requested by the doctor was not… (Inanimate, Unambiguous)

(4a) The hospital requested by the doctor was not… (Metonym, Ambiguous)
(4b) The hospital that was requested by the doctor was not… (Metonym, Unambiguous)
(4c) The specialist requested by the doctor was not… (Animate, Ambiguous)
(4d) The specialist that was requested by the doctor was not… (Animate, Unambiguous)
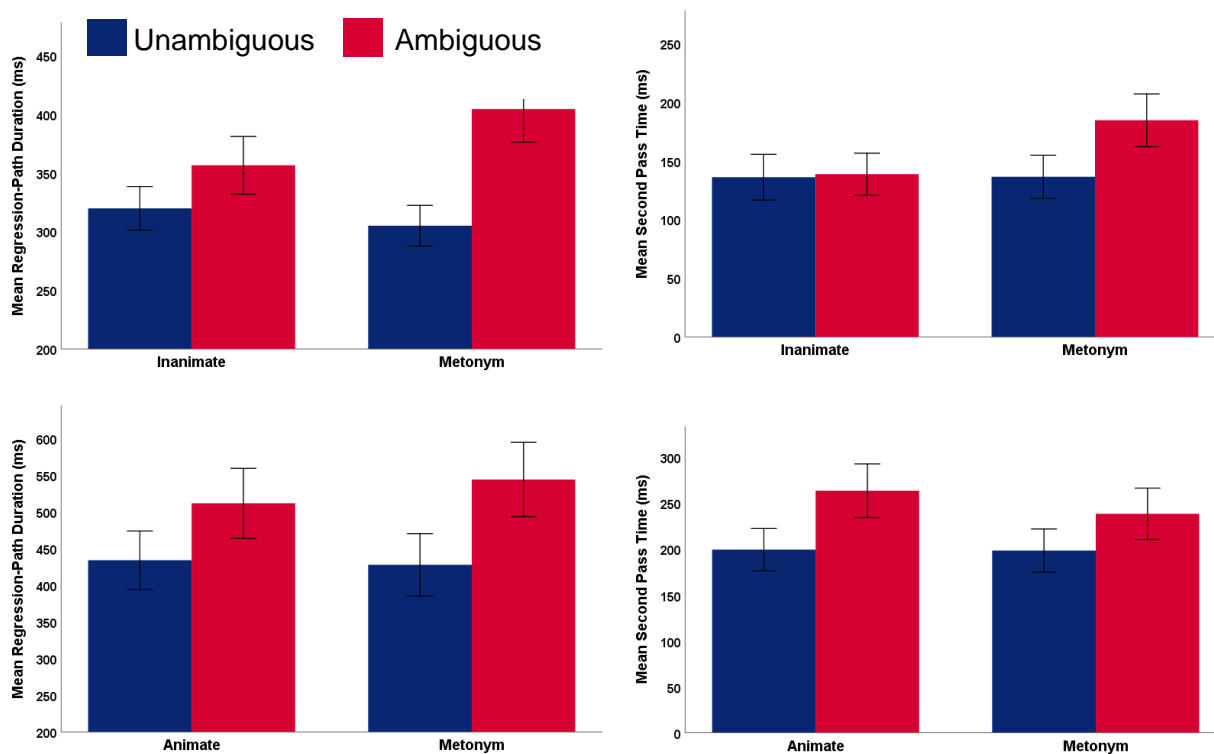
Mean regression-path duration and second pass time for Experiment 1 (top row) and Experiment 2 (bottom row) on the disambiguating by-phrase a function of subject type and sentence structure. Error bars represent 95% confidence intervals.

References

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