Three experiments on logical metonymy

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Logical metonymies (*The baker began the cake* → *baking the cake*) have been assumed to involve the interpretation of covert events (*baking*) which are not overtly realized in the sentence. The Generative Lexicon (Pustejovsky 1995) convincingly explains logical metonymy interpretation with complex lexical entries containing event information (cake → agentive quale: *baking*; telic quale: *eating*) and has been backed up by a number of experimental studies (Pylkkänen and McElree (2006)). Nevertheless, the Generative Lexicon account lacks a specific mechanism to select the understood event from the range of possible ones on the basis of context such as the agent (*The baker began the cake* → *baking the cake; The child began the cake* → *eating the cake*).

We present three experiments on logical metonymy. Experiment 1 and Experiment 2 predict that typical agents (*baker*, *icing*) generate expectations for covert events compatible with our knowledge of typical events involving agent and patient (*spread*).

(1) (typical) Der Konditor begann, die Glasur aufzutragen.
(atypical) Das Kind begann, die Glasur aufzutragen.

Experiment 1 is a self-paced reading study exploiting the verb-final word order in German subordinate phrases where the covert event is made explicit. Faster reading times were found at the subordinate verb position for typical agents compared to atypical ones ($F_1(1, 29) = 4.65$, $p = 0.039$; $F_2(1, 47) = 4.15$, $p = 0.047$). Experiment 2 adopts a probe recognition paradigm. We now present the sentences in a strictly metonymical form (*Das Kind begann die Glasur - The child began the icing*). The understood event is presented as the probe (*ESSEN - EAT*). We found longer probe recognition latencies for typical agents than for atypical agents ($F_1(1, 11) = 8.57$, $p = 0.013$; $F_2(1, 47) = 2.99$, $p = 0.09$).

The outcome of Experiment 1 and 2 supports the idea that covert events are rapidly understood online, relying on a rich and complex knowledge of how events unfold in our experience of the world, an idea consistent with recent work on Generalized Event Knowledge (McRae and Matsuki 2009).

We are currently running Experiment 3, directly addressing the question of coercion by contrasting the same sentence-probe combinations illustrated above with sentences containing a non-coercion predicate (e.g. *The man rolled a cigarette*), such that the probe (e.g., *smoke*) expresses an event part of the general knowledge activated by the sentence (e.g., *smoking* is the purpose of *rolling a cigarette*). Our model predicts no significant differences in decision latencies between the non-coercion sentences of the new experiment and the coercion sentences of the present study, given that the same general event knowledge is responsible for on-line expectation activation during sentence comprehension.

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