

# IMMEDIATE USE OF DISCOURSE CONTEXT IN ASPECTUAL COERCION – AN EYETRACKING DURING READING STUDY

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According to the principle of compositionality the meaning of a complex expression is entirely determined by the meaning of its parts and their syntactic combination. However, linguistic expressions are also highly context dependent, and the interpretation system is therefore not only dependent on the parts of complex expressions in a bottom-up fashion, but also has to be open to top-down influences of the context of utterance. A number of studies on the online composition of meaning have used the phenomenon of coercion to address the time-course of compositional interpretation within the sentence. However, to date only a single study (Traxler et al. 2005) has explicitly investigated the effects of contextual information on the resolution of sentences involving complement coercion (e.g., *begin the book*). The present experiment studied the interplay between sentential and contextual information during the online resolution of yet another coercion type, viz. aspectual coercion (see Piñango et al 1999, Paczynski et al. 2015, a.o.). In particular, we tested whether contextual information is immediately used to resolve compositional conflicts during online interpretation. Consider (1).

- (1) Als es ihm heute gelang, in einer Stunde zu joggen, freute er sich sehr.  
When he managed today in one hour to jog, he was very happy.

When uttered out of the blue, sentence (1) is hardly interpretable. The *in-adverbial* requires a telic event predicate of the accomplishment type (Vendler 1957, Dowty 1979), but *Peter jogged* expresses an atelic activity. However, if the sentence makes reference to a spatially bounded path such as *five miles* it becomes perfectly interpretable (cf. Krifka 1992). German sentences of type (1) were embedded in a discourse context which introduced a bounded path in the preceding discourse such as (2) translated from German.

- (2) Half a year ago Peter started to jog a distance of eight kilometers every day. When he started he was quite slow but he has become faster and faster.

Based on the pragmatic literature (e.g. Recanati 2010 vs. Cappelen & Lepore 2005) two alternative hypotheses were formulated. The *Composition in Context Hypothesis* predicts immediate availability of the bounded path from the context and hence no temporary mismatch effect when composing the verb of the target sentence with the adverbial. Alternatively, the initial compositional interpretation of the target sentence could operate strictly locally encapsulated from contextual information. The latter hypothesis predicts an initial semantic mismatch at the underlined critical region *to jog*, followed by contextually driven repair by enriching the activity into an accomplishment. This should be reflected by an immediate slow-down relative to an aspectual control condition; cf. (3).

- (3) Half a year ago Peter started to jog every day. When he started he could barely jog for ten minutes but he is becoming better and better.  
Als es ihm heute gelang, eine ganze Stunde zu joggen, ...  
When he managed today for one hour to jog, ...

In order to compare the timing of aspectual enrichment with the breakdown of aspectual interpretation, a mismatch condition was included. The atelic contexts of the control condition were combined with the *in*-modified target sentences.

While the two hypotheses clearly differ with respect to their predictions concerning the time course of interpretation, both hypotheses predict that the coercion condition should eventually be repaired making use of contextual information. This was confirmed in two offline acceptability rating experiments.

**Pretests:** 24 items were constructed in the aspectual enrichment, control and mismatch conditions. The first pretest (N=30) elicited discourse sensibility judgments on a seven-point scale. The statistical analysis of the ratings revealed that the aspectual enrichment condition was fully acceptable. Mismatch, by contrast, was perceived as nonsensical at the same level as clearly nonsensical fillers. The interpretation data thus confirm that the contextual support in the aspectual enrichment condition made the target sentences fully acceptable and that the telic target sentences do not fit an atelic context.

The second pretest (N=20) confirmed that without supporting context the telic target sentences were not fully well formed but required further contextual support. Decontextualized target sentences with *for-adverbials* were rated much better than sentences with *in-adverbials*. However, the target sentences with *in-adverbials* were still rated better than clearly nonsensical fillers suggesting that participants were well aware of the fact that the sentences with *in-adverbials* might turn out to be well-formed given appropriate contextual support.

**Eyetracking Experiment:** 48 participants read the pretested discourses together with 66 fillers while their eye gaze was monitored. After each trial they provided a sensibility judgment.

The analysis of acceptance rates did not reveal any reliable differences between coercion and control. Aspectual mismatch, by contrast, was rejected as uninterpretable equally often as were nonsensical fillers. Thus, participants perceived a clear aspectual mismatch in the mismatch condition and computed aspectually enriched interpretations of the target sentences in the coercion condition.

The analyses of first fixation durations, first-pass times and proportions of regressions out of the critical verb region consistently revealed processing costs of the aspectual mismatch condition relative to the control and the coercion condition. Crucially, none of the analyzed eyetracking measures related to first-pass reading indicated any reliable differences between the coercion and the control condition. This is fully consistent with the *Composition in Context Hypothesis*. However, coercion led to significantly longer second-pass times of the critical verb region than the control condition suggesting that the integration of contextual information from the preceding context is in fact not cost free but requires building up a more complex discourse model than in the control condition.

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