The role of contextual information on the incremental composition of meaning

Modular composition hypothesis (MC): The semantic processor operates encapsulated from context. Context is only considered if a) lexical items need contextual support or b) compositional conflicts trigger coercion.

Interactive composition hypothesis (IC): The semantic processor uses contextual information in an interactive fashion making coercion operations unnecessary in case the contextual information supports the coerced meaning.

▶ Coercion sentences with or without supporting context. Can supportive context eliminate coercion costs? What are the limits of contextual facilitation?

Aims of the project Composition in Context (CiC): Contextual Effects on the Online Processing of Eventive Coercion

Previous work:
▶ Coercion draws on pragmatic information (e.g., Pustejovsky 1995)

(1) a. The author/the student began the book.
   b. The climber/the pilot reached the top within 10 minutes.

▶ Coercion leads to processing difficulty (McElree et al. 2001, Brennan & Pytlakén 2008, but see Pickering et al. 2006)

▶ Coercion difficulty may disappear after having processed supportive context (Traxler et al. 2005)

(2) The student read a book in his dorm room. After he started it…

Discourse representation contains an event token, anaphor it has to be related back to preceding discourse. Compatible with both, MC and IC!

This project:
▶ The project mainly focuses on aspec-tual coercion (Work Package 1):

- Aspectual enrichment: coercion adds an eventuality (the ‘+ arrows’ in Moens & Steedman’s 1986 network)
- Aspectual impoverishment: coercion subtracts an eventuality (the ‘− arrows’)
- Ambiguity resolution: more than one possible coercion operation (2 arrows)

▶ Complement coercion: Disentangle effects of establishing anaphoric links from computing event structure (Work Package 2)

▶ Link the findings to psycho- and neurolinguistic models of discourse comprehension (e.g., the Syntax-Discourse Model SDM of Burkhardt 2006)

Pilot study (PS): First evidence for IC from self-paced reading (Bott 2010, Exp. 3)

▶ Out of the blue, sentence (3-a) is infelicitous

(3) a. Today, he jogged in twenty minutes…
   b. Today, he jogged for twenty minutes…

▶ Given the right context, however, aspectual mismatch disappears:
▶ telic context: Half a year ago, Peter started to jog four kilometers every day. When he began he was quite slow, but now he is really fast.
▶ atelic context: Half a year ago, Peter started jogging every day. When he began he had to stop after a short time, but now he can run for quite a long time.

▶ 24 items in German with activity verbs in a 2 x 2 within design, 60 fillers, 32 participants

▶ No disruption in the telic in condition
▶ If the context provides an upper bound to the activity, interpretation proceeds as smoothly as for-modification after an atelic context
▶ Composition process of in-adverbial modifying an accomplishment: preparatory process given in the sentence. culmination comes from the context
▶ In accordance with IC, contextual information is immediately used for aspec-tual enrichment
▶ Same result with methods with better temporal resolution than self-paced reading?

Aspec-tual enrichment (WP 1.1)

IC-1: Coercion difficulty of aspec-tual enrichment completely disappears in supportive context

- Embedded in telic vs. atelic contexts (cf. PS):

(4) a. Als es ihm heute gelang, einer h. zu joggen, war er selbst überrascht.
   b. Als es ihm heute gelang, eine h. zu joggen, war er selbst überrascht.

▶ Eyetracking during reading and an ERP study
▶ Predictions for eyetracking: Modification of an activity motion verb by in-adverbials in a telic context is as easy as for an atelic context. In atelic contexts yields a mismatch.
▶ Predictions for the ERP study: In atelic contexts cannot be linked to the preceding discourse. According to the SDM this affects the stage of discourse updating resulting in a P600 effect. According to IC, no difference between in-adverbials in telic contexts and for-adverbials in atelic contexts.

Aspec-tual impoverishment (WP 1.2)

Constraints on IC: Aspec-tual impoverishment is cost-free as long as comprehenders have access to the propositional representation

▶ Our previous research (Bott 2010, Bott & Hamm 2014) revealed no RT difference:

(5) a. Der Bauunternehmer errichtete das Haus in zwei Monaten, dann …
   b. Der Bauunternehmer errichtete den Konstruktor was building das Haus zwei Monate lang, dann …

▶ Assumed discourse constraint: Coercion operates on the propositional representation
▶ This representation is rather short-lived
▶ Thus, coercion is predicted to be difficult when moving across a sentence boundary:

(6) The constructor built the house. He did so for 2 months / in 2 months …
▶ To be tested in eyetracking during reading

Resolution of aspectual ambiguity (WP 1.3)

IC-2: Supportive context immediately overrides general preferences for one coercion route over another, also possible, coercion route

(7) a. Er hat das Becken drei h. lang
   b. Er hat das Becken drei h. lang

▶ (7-a) has to readings: one long, interrupted diving event (implausible) vs. iterative reading
▶ (7-b) serves as control condition (see e.g., Paczynski et al. 2014)
▶ (7-a) leads to difficulty, in contrast to iterative semelfactives like sneeze (Bott 2008, 2010)
▶ Claim: Implausible reading initially preferred, world knowledge triggers aspec-tual reanalysis
▶ Prediction: Coercion difficulty disappears after:

(8) A boy practiced diving a certain distance
▶ To be tested in eyetracking during reading

References

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