

The role of epistemic state in the processing of speaker's meaning

Hanna Weiland-Breckle & Petra B. Schumacher

Perspective may influence the processing of truth values, as suggested by Travis (1997). To illustrate this, he presents a story in which a girl painted the russet leaves of her Japanese maple green. Then a botanist asks her for green leaves for a green-leaf chemistry study. The girl points at the painted leaves and says: 'These leaves are green.' Travis argued that from the girl's perspective this utterance is true; for the botanist and his particular needs, however, the utterance is false. In the following debate between proponents of semantic and pragmatic accounts, the fact that the addressee of an utterance takes the perspective of the speaker to calculate the truth values has been taken for granted. However, empirical data question this assumption by revealing that interlocutors adopt an egocentric stance in communication (cf. e.g. Keysar et al. 2000; Barr 2014). We therefore conducted a series of experiments on the basis of Travis' example to test whether the epistemic state of the protagonists is considered by the addressee when calculating truth values.

To assess the different explanatory accounts of aerial, speaker's and egocentric knowledge states, participants provided truth value judgments on utterances like 'These leaves are green.' following above story using behavioral and real-time processing measures. We first report truth value judgments for utterances made by a manipulator (the girl in above example), a person interested in the original properties (the botanist) and a neutral person unaware of the (color) change using three values ('true', 'false', 'not determinable') to get a finer-grained pattern of responses. The data indicate that participants converge on speaker's perspective and that considering the knowledge states of the different protagonists influenced truth values as suggested by Travis (1997). This is further corroborated by judgments under time pressure.

Additionally we present time-course data from electrophysiology, which allows us to gain insight into discrete processing steps as the sentence unfolds. Based on previous ERP-research (e.g., Nieuwland & Kuperberg 2008; Bornkessel-Schlesewsky et al. 2013), a more pronounced N400 is predicted for trials that are judged 'false' in the truth value judgment task compared to those judged 'true'. In contrast, our data show no N400 for statements judged 'false' but a Late Positivity. We interpret the missing N400 with a contextual priming effect (high expectation of '*green*') and the Late Positivity with

discourse updating processes (cf. Schumacher 2013) since the representation might alternate from 'green leaves' to 'original red leaves' in reaching the judgment 'false'. No difference was found between the different knowledge states, as might have been predicted for perspective-based reasoning (cf. e.g., Sabbagh & Taylor 2000), which may support the view that interpretation was egocentric initially.

References

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