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## Neurocognitive adaptation to repeated use of ad-hoc metonymies

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(Referential) metonymies reflect various kinds of relations where linguistically one entity substitutes another (e.g., content-for-container, place-for-event, etc.). Metonymies have different levels of conventionalisation that also come with different processing mechanisms (see Schumacher, 2013). In the present study, we investigated how neurocognitive processes adapt to repeated use of metonymic expressions (reflected in changing ERP patterns over time). A relevant ERP response regarding the processing of metonymies is the Late Positivity (LP), where the signal peaks around 600 ms after the onset of the critical stimulus, indicating an operation where a new conceptual representation is computed and the discourse model is updated (Burkhardt, 2007). The LP has been associated with the operation of meaning extension and referential shift (Schumacher, 2013). Earlier EEG studies indicate that ad-hoc metonymies have a more pronounced LP compared to their controls (Schumacher, 2013). Furthermore, a study by Schumacher et al. (2023) replicated this result and further found a gradual effect, i.e. the more conventionalised a place-for-event expression the lower the LP (conventionalization was determined on the basis of association ratings). In the present study, we wanted to investigate ‘in vitro’ conventionalisation. We created a design that allowed us to study the change of meaning in a naturalistic discourse. In our study, 42 participants listened to ten scripted reports where speakers talk about their interaction with different people in the context of dating apps. After introducing each person with a salient property (e.g., [...] *whose prominent moustache was not to be overlooked*), the property was used subsequently five times to refer to this person across the report (e.g., *the moustache reported that he gave singing lessons.*; note that in German the metonymy-triggering predicate (e.g., *reported*) preceded the target word). Our results indicate that we were able to replicate previous findings of highly controlled experiments, i.e., a more pronounced LP for metonymies vs. their controls (normal person referring denotation e.g., *After the meeting, the swimmer made another appointment with me*). Furthermore, our results indicate an effect of mention (more pronounced LP for the first mention), suggesting a conventionalisation process as the discourse unfolds. This study has the potential to show how meaning and the corresponding mental representation adapt during the construction of a discourse. This finding provides a basis to further test why some meanings become established, and which linguistic parameters are crucial for this process. Meaning change has immediate consequences for comprehension, indicating that listeners adapt to current use conditions almost instantaneously, rendering further updating costs superfluous. Mental representations should thus be considered to be fluid and context-dependent.

**References:** • Burkhardt, P. (2007). The P600 reflects cost of new information in discourse memory. *Neuroreport*, 1851–1854. • Schumacher, P. B. (2013). When combinatorial processing results in reconceptualization: Toward a new approach of compositionality. *Frontiers in Psychology*, 4. • Schumacher, P. B., Weiland-Breckle, H., Reul, G., & Brilmayer, I. (2023). *Tracking meaning evolution in the brain: Processing consequences of conventionalization. Cognition*, 240, 105598.