

Scientific Report

ESF Short Visit Grant within the framework of the ESF Activity
'Experimental Pragmatics in Europe'

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Project meeting in Pisa, Italy of Petra Schumacher & Hanna Weiland with Valentina Bambini & Marta Ghio from December 08–10, 2011.

The four participants of the project “Steps of the mind over figurative meanings” met in Pisa for the final discussion of the findings from the ERP/ERP-Masked Priming studies carried out in Mainz, Germany and the SAT and sensicality data collected in Pisa, Italy. We discussed the experimental results and their implications for theories of pragmatic processing. We also planned future publications and tried to consolidate the findings obtained for the processing of metaphor and metonymy in different experimental techniques.

At the beginning of the project, we decided to use different methodologies in order to address distinct aspects of the processing of figurative language. The results of our project were as follows.

A. On the role of literal meaning aspects

To find out whether literal meaning aspects play a role in the processing of metaphor and metonymy, we employed a combined masked priming event-related potential paradigm. The data support accounts that propose a lingering of literal meaning components. Interestingly, metonymy and metaphor differ in that the former is even more sensitive to literal meaning than the latter. One paper has already been submitted following our last meeting; at the current meeting, we clarified a few more issues relating to the second publication (in preparation).

B. On the temporal dynamics of figurative processing

To investigate whether distinct processing steps are involved in the computation of figurative meaning, we utilized the speed accuracy tradeoff paradigm. The results we obtained also indicate differences between metonymy and metaphor. First, metaphors show a lower asymptotic value than their literal controls relative to the contrast between metonymic expressions and their literal controls. This finding is further supported by the sensicality data. More importantly, metonymies showed an additional difference in intercept relative to their literal controls, while metaphors did not differ in intercept latency compared to their literal controls.

We discussed different explanations for this difference in intercept. First, metonymy might engage grammatical operations that metaphor does not. Here the intercept differences converge with findings from grammatical function reanalysis (Bornkessel et al. 2004). The fact that metonymy shows distinct temporal dynamics also converges with reports of rate differences (another measure of temporal dynamics) in complement coercion (McElree et al. 2006). More specifically, the additional effort observed for metonymy might result from the animacy violation in a sentence like ‘The girl read Descartes’. It might also result from a sortal shift, which nevertheless represents a routinized operation (producer → product). We hope that we will have the opportunity to tease apart these explanations in future work.

During our meeting, we laid out the basis for two papers that are the scientific output of this part of the project.

C. Consolidation

While our findings converge on many aspects, there are interesting differences that we have discussed extensively during our meeting in Pisa. Crucially, the direct comparison of metonymy and

metaphor yields distinct processing patterns in the sensicality task, masked priming ERP, speed accuracy tradeoff and eye tracking, but no difference in classic ERP. The similar patterns observed in ERP (i.e. N400-LatePositivity) indicate that both metaphor and metonymy engage the same processing phases, lexical access & pragmatic operations. The differences observed in other paradigms indicate that dynamics and effort differ. Furthermore, the differences in SAT and masked priming ERP point to different processes in terms of the conceptual information and operations required to reach a felicitous interpretation.

In sum, we believe that this project was very successful as it produced novel data from various experimental paradigms, which allow us to make insightful comparisons across linguistic phenomena (metaphor/metonymy) and psycholinguistic measures.

We are very thankful to the ESF 'Experimental Pragmatics in Europe' network for providing with this opportunity.



The project team at the end of a successful meeting.