The Comprehension of Novel Noun-Noun Compounds: The Influence of Out-of-Context Interpretations on In-Context Understanding

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Introduction

A key question for language research, and in particular conceptual combination, is the dependence of in-context understanding on out-of-context meanings. Gerrig & Bortfeld (1999) contrast two views of conceptual combination comprehension in context, the interdependence and independence views. The *interdependence view* states that out-of-context meanings influence the in-context comprehension of novel combinations while the *independence view* (adopted by Gerrig and Bortfeld) maintains that context is the prevailing factor and prevents the activation of interpretations that might normally be available out of context. We test this hypothesis by generating a set of compounds whose interpretations differ in their frequency of production out of context and then varying the contexts in which the high-frequency or low-frequency interpretations are embedded. We can then establish whether these out-of-context interpretations have a bearing on in-context processing.

Experiment 1

We collected participants' out-of-context interpretations for novel noun-noun compounds and categorised them by their frequency of production. High-frequency (HF) and low frequency (LF) interpretations for each compound were selected from these frequency-scored sets. For example, for the compound *rhinoceros horse*, the HF interpretation was "a horse that has a horn" while the LF interpretation was "a horse that has tough skin". To confirm a difference between the HF and LF interpretations a response time experiment was run. The difference between high and low frequency interpretations was reliable, $F1(1, 20) = 5.845$, $p = 0.0253$.

Experiment 2

We define 3 context types - neutral, supportive and alternative. Supportive and alternative contexts make explicit reference to the relation between the head and modifier, while the neutral context makes no mention of the relation. The Supportive Context is defined as the condition where the paraphrase judgement question at the end of the story supports the interpretation suggested by the story. By contrast, the Alternative Context is the condition where the paraphrase judgement question supports an alternative question to the story i.e. if the story supports a HF interpretation then the question that follows will refer to the LF interpretation.

If out-of-context interpretations do not effect in-context processing then we would expect no difference between the HF and LF conditions. If there is an influence then a difference in response time should be evident. This should be clearest in the Alternative condition where people move from one interpretation to another. If the independence view holds then it should take the same amount of time to go from HF to LF as it does to go from LF to HF, since their frequency of production out of context should not impact on processing time. This, however was not the case. We found a reliable difference between the high and low frequency interpretations, $F1(1, 40) = 12.933$, $p < 0.001$, and also a reliable trend (using Page's L) showing that the supportive context was responded to most quickly followed by the neutral and then the alternative $L(12) = 158.5$, $p < 0.005$**.** The differences between the contexts is shown in Figure 1.

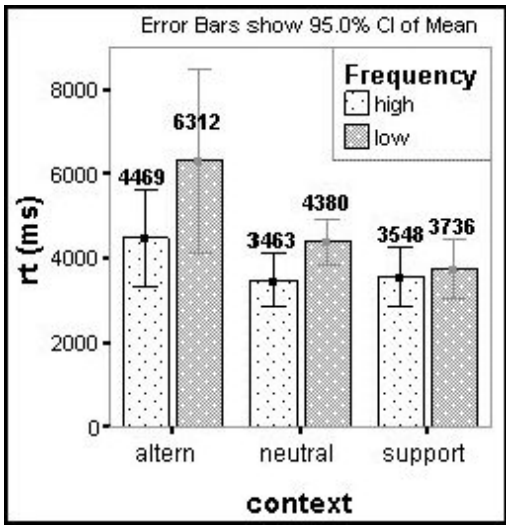

Figure 1: Mean RTs for HF / LF interpretations per context.

Discussion

We have shown here that in certain context types (alternative and neutral) out-of-context interpretations to have an effect on in-context processing. This shows that one aspect of out-of-context interpretations, namely their frequency of production, has an impact on the ease with which interpretations are comprehended in-context, which violates the basic assumption of the independence view.

References

Gerrig, R. J. & Bortfeld, H. (1999). Sense creation in and out of discourse contexts. *Journal of memory and Language*, 41, 457-468.