

Discourse Expectations Induced by Perspectivization: The Case of Counteridenticals

Johanna Klages¹, Anke Holler¹, Elsi Kaiser², & Thomas Weskott¹
¹University of Göttingen, ²University of Southern California

Perspectivization phenomena constitute a prime example of how discourse expectations can affect interpretation at the sentence level. Some natural language expressions depend on a perspective (very roughly: an experiencer and a dimension of experience) in order to be assigned a truth value. This is probably most obvious in the case of relational locative expressions (RLEs) like *to the left of*, *in front of*, etc. In order to be able to assign a truth value to (1), we have to know how the speaker of (1) is oriented relative to Paul and Eve (and how Paul and Eve are oriented relative to each other).

(1) Paul is sitting to the left of Eve.

Thus, the perspective provided by the discourse context determines how a truth value gets assigned to the sentence.

Perspective sensitivity has attracted quite a lot of attention in the formal semantics literature (see Bylinina, McCready, & Sudo, 2015, for an overview). Although there are some proposals around of how perspective sensitive items get assigned their truth conditional content in a given context (see, for example, Lasersohn, 2018, for a recent elaborate proposal), the exact details of how this interpretation in context has to be spelled out are still a matter of debate. One of the problems that every account of perspective sensitivity has to come to grips with is that perspectives can shift throughout discourse. Thus, while (1) may be true from one protagonist's perspective, it might be false from that of some other protagonist (e.g. if they are facing each other).

There are countless ways how perspectives might get shifted by linguistic and paralinguistic means. Here, we are interested in a rather explicit linguistic shifting device: utterances of the form *If I were you, I ...*, which were dubbed *counteridenticals* in Lewis (1973). As Lewis noted already, these counterfactuals have two readings: (i) an *advice* reading, in which the speaker is offering the hearer what she (the speaker) thinks might be helpful in resolving his (the hearer's) dilemma, and uses a counterfactual to do so; and (ii) an *imagination* reading, in which the speaker simply entertains the counterfactual thought about what were to be the case if she were the hearer. Note that only the latter reading can be the content of a thought; a counteridentical that is never uttered can barely be a piece of advice (see Kauf, 2017).

Our work represents a first attempt at a systematic experimental investigation of counteridenticals as perspective shifting devices. We embedded utterances of the form "If I were you/him, I'd take the left/right box." into contexts that were pragmatically highly constrained so as to favor the shifted (advice) reading. In order to have a fair comparison with the advice readings, we tested them against imperatives, in which shifting is not encoded explicitly. Our main hypothesis was that the shifted interpretation of the spatial relational expression (*left/right*) should be more available with counteridenticals than with imperatives. We used visual world eye-tracking to assess the availability of interpretations; availability of a shifted interpretation was operationalized as proportion of fixations to one of two areas (the "Hearer-intrinsic Box"; s. below), and as proportion of decisions in a subsequent 2AFC task.

Native German speaking students (n=24) were presented with 24 experimental items plus 48 fillers. On the display, two characters were sitting opposite each other at a table with two boxes on it; s. Figure 1.

The background story described one box as containing a preferred item (e.g., chocolate), and one containing a dispreferred one (cottage cheese); while the characters shared preferences, only the speaker/thinker (S/T) character knew the content of the boxes, while the hearer (H), who was to pick the box, didn't. Target sentences appeared in one of four conditions in table 1 (see p. 2). Afterwards, participants were prompted to respond to a question ("Which box does Maria have in mind?") by clicking on the respective box. All target sentences included an RLE (left, right, behind or in front of) and were manipulated by (i) FORM (Counteridentical vs. Imperative) and (ii) MODE (Speech vs. Thought), yielding a 2x2-design.

We predicted that proportions of fixations on the box associated with the shifted interpretation ("Hearer-

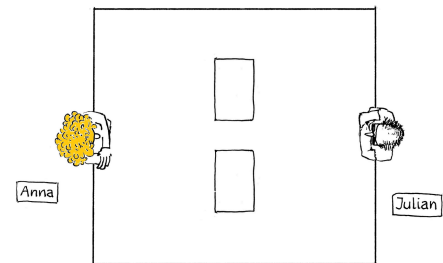


Figure 1: Sample stimulus picture

intrinsic Box”) of the RLE should exhibit two main effects unfolding after the offset of the RLE (plus 200ms). Given our assumption that counteridenticals constitute a strong shifting device, we predicted a main effect of FORM. Additionally, we hypothesized that a spoken utterance should bias participants towards H’s rather than S’s perspective. In contrast, the same sentence appearing as a thought should not lead to such a bias. Consequently, we predicted that there should be no shifted interpretations of RLEs, when both perspective-shifting cues are absent (i.e., in condition (+)). For the time course of the proportion of fixations dependent on condition, see Fig. 2.

Condition	Sentence
(●) Counteridentical / Speech	“If I were you, I’d take the left box.”
(▲) Imperative / Speech	“Take the left box!”
(■) Counteridentical / Thought	“Uhhm, if I were he/she, I’d take the left box.”
(+) Imperative / Thought	“Uhhm, take the left box!”

Table 1: Sample Target Sentence in all four conditions.

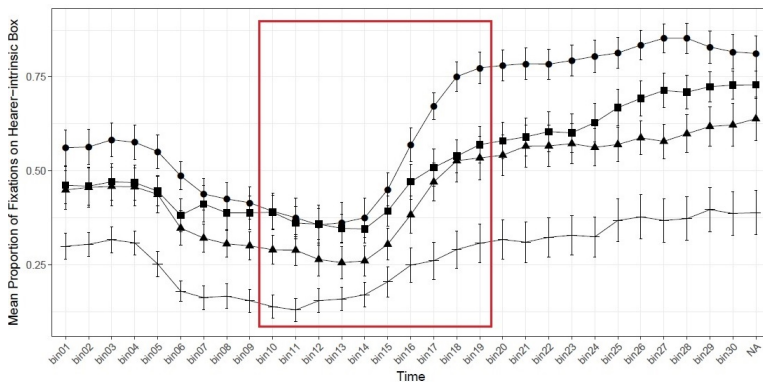


Figure 2: Descriptive statistics for the time frame ‘onset of the critical word (e.g., ‘left’) plus 1500ms’.

We fitted a GAMM to the data with FORM and MODE as fixed effects, and participants and items as random effects using the VWPre package (Porretta et al., 2018). An alternative analysis where we fitted a non-linear mixed effects model using the R package nlme and let the model predict the asymptote of the sigmoid in the fixation pattern visible in the time window between bin10 and bin19 (s. the red rectangle in Fig.1) yielded essentially the same results. Both factors, MODE as well as FORM, significantly improved model fit (both $ps < .01$);

there was no interaction, $p > .10$.

Hence, our predictions were borne out. Counteridenticals exhibit a strong shifting potential as compared to imperatives: shifted interpretations are more available with the former than with the latter. In addition, the speech condition boosts the availability of the shifted interpretation independently. Both effects kick in around 200ms after the offset of the RLE. The strong shifting effect of counteridenticals can be explained in terms of counterpart theories (s. Lewis, 1986). Participants seem to interpret the pronoun in the counteridentical as describing a counterpart of S and H that shares spatial properties of H while retaining epistemic properties of S. Our results show—for the first time, as far as we are aware—that the on-line interpretation of a perspective sensitive item is strongly influenced by the presence of a shifting device like counteridenticals. While this might in and of itself not be surprising, the time course of the effect is: perspectivized interpretations unfold already 300ms after the onset of the critical RLE. In addition, the influence of the factor MODE shows that the interpretation of the counteridentical must be constrained by pragmatic factors. At the current point, we can only speculate as to what this means in terms of how shifting devices like counteridenticals and perspective-sensitive expressions like RLEs interact at the semantics-pragmatics interface. But, given our data, it does not seem unreasonable to assume that a common semantic core for both counteridentical readings is available, and the pragmatics of the context and the utterance filter the interpretational options in order to yield the advice reading.

In sum, our data show how perspectivization by a shifting device like counteridenticals drives listener’s expectations as to the interpretation of perspective-sensitive expressions like RLEs. As shown by the early timing of the effect, this type of expectation exerts its influence immediately after processing the perspective-sensitive expressions. In addition, the equally early effect of speech vs. thought mode shows that these expectations are closely tied to the overall discourse setting, and that for perspective-sensitive interpretation to take place, both discourse-level and sentence-level information have to be integrated.