

Domain restriction and discourse structure: Evidence from processing

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Introduction. Assuming a uniqueness-based analysis, definites, like quantifiers, are typically interpreted relative to a contextual domain: *The professor laughed* is only interpretable when there is a unique professor. While it is clear that contextual support is needed to derive the comprehenders' actual interpretation, there are two views with respect to how domain restriction is implemented. Pragmatic Enrichment approaches (e.g., Neale 1990, Bach 1994) see it as purely pragmatic. The literal meaning of sentences is taken to be unrestricted (even if that leads to infelicity), and comprehenders are assumed to go through Gricean reasoning to infer the intended meaning. Syntactic enrichment approaches (e.g., von Stechow 1994, Stanley and Szabo 2000) assume that NPs contain covert, syntactically represented C-variables (place-holders for predicates) or situation pronouns (Kratzer 2007, Schwarz 2011) that are interpreted much like pronouns, namely via the assignment function. These approaches give rise to different expectations for the time course of domain restriction processing, assuming that pragmatic implicatures incur additional processing time. Another important question for theories of domain restriction is how discourse context affects domain selection, and the accounts differ in their options for incorporating such effects. A visual world eye-tracking study (with Truth Value Judgments), was conducted to investigate these issues.

Methods. Subjects were eye-tracked while seeing displays of five colored shapes and listening to auditory stimuli, and subsequently making truth-value-judgments. Target sentences were of the form *The circle is black/green* and were presented in three different discourse contexts (see below). Displays were varied as to whether the circle was unique or not. Contexts contained spatial PPs such as *on the top*, which provided a suitable domain restriction option for the non-unique conditions, ensuring uniqueness relative to the relevant sub-domain. This yielded a 2x3 interaction design. 36 experimental sets were presented to 36 subjects in 6 counterbalanced groups (+36 fillers). Target adjectives held either of target or competitor shapes (between-items). TVJs revealed the choice of referent in the non-unique conditions. The design allowed us to investigate the strength of the domain restriction effects in the different contexts and the time course of domain restriction choices in processing.

Results. Responses for PPFront, where the PP serves as a frame adverbial for the entire discourse, reflected a higher rate of choosing the top circle when the adjective was false of that circle, suggesting that the domain restriction effect is strongest in this context. Eye movements were analyzed during the time windows corresponding to 'circle is' and the first 1000ms after the onset of the adjective. In the initial time window, there were more looks to the competitor (green) circle in the PPPred and PPNP conditions, as reflected in a 2x3 interaction and corresponding simple effects in comparisons with PPFront in the non-unique conditions. During the adjective time-window, PPNP pattered more like PPFront when the adjective was 'green'. The latter was significantly different from PPPred, which yielded more looks to the competitor.

Discussion. Domain restriction effects were reflected in eye-movements more or less immediately during the noun-time-window. This seems contrary to the expectation of pragmatic enrichment accounts, where domain restriction is determined by (presumably costly) online pragmatic reasoning, and is thus more consistent with syntactic approaches. The differences between the various contexts furthermore reveal fine-grained effects of discourse context on choice of domain restriction. This provides further grounds for deciding between syntactic approaches to the extent that situational accounts offer a more straightforward implementation of discourse factors (discussed in more detail in the poster presentation).

(PPPred) The yellow triangle is on the top. The circle is {black / green}

(PPFront) On the top, there's a yellow triangle. The circle is {black / green}

(PPNP) The TRIANGLE on the top is yellow. The circle is {black / green} ('on the top' deaccented)

Non-Unique display

| | | |
|---------------------|-------------|---------------------|
| Black circle | | Yellow triangle |
| | Blue square | |
| Red diamond | | Green circle |

Unique display (control)

| | | |
|---------------------|-------------|---------------------|
| Black circle | | Yellow triangle |
| | Blue square | |
| Red diamond | | Green square |