Understanding the dynamics of interpretation:
pragmatic enrichment and different types of non-literal speech.

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Do listeners process literal and figurative speech differently? Research testing interpretation times has resulted in mixed findings. Some researchers have found that figurative language is processed more slowly than literal language (e.g. Noveck et.al 2001) whereas others have not (e.g. Glucksberg 2003, Gibbs & Tendahl 2006). This may be due to limitations of standard reaction time methodology, such as speed accuracy trade-off issues (e.g. McElree & Nordlie 1999) or differences in the types of items, such as the conventionality of metaphors (e.g. Jones & Estes 2006) or the priming effect of the meaning of preceding sentences in a story (e.g. Noveck et.al 2001). We shed light on this question by recording mouse movements while people judged whether literal and figurative sentences made sense and comparing this to listeners’ reaction time data. Another limitation to the research above is that it has concentrated almost solely on metaphors. Recently, scholars in lexical pragmatics (e.g. Carston 2002, Wilson 2004) have argued that understanding non-literal speech generally involves two distinct pragmatic enrichment processes: *lexical broadening* and *lexical narrowing*. Our study examines these different types of pragmatically enriched meaning and tests whether these types of interpretation are processed via the same mechanisms.

Participants were presented with sentences and clicked on either “Sense” or “Nonsense” targets at either corner of the screen. We had two hypotheses. First, we tested whether understanding non-literal sentences involved rejecting a literal meaning. Consequently participants saw literal and figurative sentences together with matched foils. If participants rejected the literal meaning prior to interpreting the enriched meaning, mouse trajectories for the figurative meanings should exhibit greater than chance deviation towards the nonsense response label. Second, we tested whether differences would be observed using different types of non-literal language: lexical broadenings (“the goalie is a spider”) and lexical narrowings (“trip was some distance” (= long distance)).

The mouse tracking trajectories and associated reaction times are shown in Figure 1. The reaction time data indicate that figurative meaning takes longer than literal meaning for both types of stimuli, but there is no significant interaction between the stimuli types (p = .08). Similarly, mouse trajectories indicate that there is a greater attraction towards nonsensical responses for the figurative sentences than the literal sentences but no significant interaction (p = .11). However, the metaphorical sentences deviate significantly beyond the midline early in processing, (t(328) = -5.48, p < .01), while the narrowing and the literal sentences do not. This effect seems to be driven by conventionality, or, in this study, participants’ accuracy for the broadening items (see Figure 2), but overall suggests that participants are first rejecting the literal meaning before arriving at the communicated (figurative) meaning.

Our results support the argument put forth by Noveck et.al (2001) against the view that metaphorical meanings are processed as fast as literal ones, and point towards the conclusion that the current deflationary account of metaphor within Relevance Theory (e.g. Sperber & Wilson 2008) is not a definitive account of the phenomenon after all (a point also implicit in Carston 2010). With respect to narrowing, it seems that the enrichment process is much more straightforward and in line with the relevance-theoretic unified view of lexical

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pragmatics (Wilson & Carston 2007). More experiments studies are being conducted to further test and disseminate our findings.

Fig.1

Mouse-tracking results - Figurative X Literal

SENSE

- Metaphor - Figurative version
- Metaphors - Literal version
- Narrowing - Figurative version
- Narrowing - Literal version

NONSENSE

Main Effects
- Literal vs. Figurative
- Broader v Narrowing
Interaction
- Type X Condition

Fig.2

Mouse-tracking results - Broadening X Convention

SENSE

- Met.Fig.AccHigh
- Met.Fig.AccLow
- MetLit.Acc.High
- MetLit.Acc.Low

NONSENSE

Main Effects
- Literal vs. Figurative
- Broader v Narrowing
Interaction
- Type X Condition