**Perspective-shifting and anaphora: Experimental investigations**

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Many aspects of language comprehension are dependent on the identification of a perspectival/point-of-view anchor, who provides the perspectival center for interpreting the content of an utterance. To fully interpret epithets (ex.1a), evaluative adjectives (ex.1b), predicates of personal taste (ex.1c), epistemic modals (ex.1d) and adverbials of possibility (ex.1e), we need to know whose opinion/perspective/knowledge is being referred to.

(1a) Kate promised Mark she would take the children to the park, but then the idiot forgot all about it!
(1b) Kate promised Mark she would take the children to the park, but then the foolish girl forgot all about it!
(1c) Rollercoasters are fun.
(1d) The rollercoaster at the amusement park might be under construction.
(1e) The rollercoaster at the amusement park is probably under construction.

Many of these expressions have been analyzed as making reference to a perspectival center/judge/evaluator. This notion can be formalized semantically in different ways, e.g. Lasersohn's (2005) *judge* parameter for predicates of personal taste, Potts' (2007) extensions, Stephenson (2007) on epistemic modals, Patel-Grosz's (2012) *evaluator* for epithets, and Harris' *scoreboard* (2012). For a judge-free approach based on genericity, see Pearson (2013) on predicated of personal taste. Abstracting away from the details of the implementation it is largely agreed today that the speaker is the default judge, though not the only possible one (e.g. Lasersohn 2005, Stephenson 2007, Harris and Potts 2009, Harris 2012, Patel-Grosz 2012, see also Karttunen & Zaenen 2005, Amaral et al 2007).

The observation that these expressions have a strong preference to be speaker-oriented contrasts with work in literary narratology, which treats many of these expressions as cues that we should assume the perspective of a character and *abandon* the perspective of the author/writer/speaker (e.g. Banfield 1973). They are often regarded as cues for Free Indirect Discourse (FID), which shifts perspective to a character, conveying that character's thoughts/speech (ex.3, for recent linguistic FID work: Schlenker 2004, 1999, Sharvit 2008, Maier 2012, 2015). Various cues to FID have been identified (e.g. McHale 1978, Fludernik 1993), including epithets, evaluative adjectives, and adverbials of possibility–many of the same cues that theoretical linguistics treats as having a strong speaker-oriented bias.

In sum, theoretical linguists have observed that expressive language has a strong bias to be interpreted from the speaker's perspective, whereas narratologists argue that expressives are a cue to shift away from the speaker's perspective, to assume the perspective of one of the characters.

To shed light on this tension, I present a series of psycholinguistic experiments using a range of methodologies, including eye-tracking, which investigate the processing of cues to free indirect discourse. We explore how cues such as epithets and adverbs of possibility influence people's interpretation of discourse, using pronoun resolution as a tool to tap into potential FID interpretations, in order to see (i) whether naïve readers are sensitive to such cues and (ii) if some cues are stronger/more powerful 'judge shifters' than others. In sentences like (ex,2,3), the interpretation of the pronoun in the second sentence depends on whether the second sentence is interpreted as being FID (e.g. from Mary's point of view in (2b), and Luke's point of view in (2c). (Note that we are not testing shifts of the "I => she" type because the pronoun in the FID context does not refer to the protagonist.)

(2a) plain sentence:        Mary looked woefully at Elizabeth. **She** was sick.
(2b) FID cue:               Mary looked woefully at Elizabeth. Poor girl; **she** was sick.

(3a) plain sentence:     Luke glanced at Andrew warily.  **He** had put toothpaste in the shampoo bottle again.
(3b) FID cue:     Luke glanced at Andrew warily. **He** had <u>probably</u> put toothpaste in the shampoo bottle again.

Furthermore, in addition to testing people's pronoun interpretation and perspectival processing of sentences like ex.(2,3), we also look at broader contextual cues, in particular the availability/salience of the narrator/speaker. In particular, we compare a fiction context with an email context. To see why this contrast is significant, consider ex.(1a): If this is a sentence in an email from a friend, then the friend (speaker/writer) is expected to have and express opinions – i.e., she can function as the judge/perspectival center. So the epithet 'the idiot' can receive a speaker-oriented interpretation (reflects the friend's opinion). However, if ex.(1a) is from a novel, the author/narrator ('speaker') does not normally directly express his/her opinions, and thus is less available to be the judge/perspectival center. The characters are the ones who express their opinions, and function as judges. Thus, the epithet receives a non-speaker-oriented interpretation (e.g. Mark's opinion of Kate). We investigate whether people interpret potential FID-cued sentences differently in email contexts vs. fiction contexts, and show that this is indeed the case, i.e. the availability of different referents to be the judge (if we adopt a judge-based approach) is modulated not only by the linguistic content of the sentence but also its broader context.

Finally, after looking at effects of word-level/sentence-levels cues (e.g. adverbials, epithets) and effects of the context (email/fiction), we test a more general contextual question: Does thinking about other minds – for example, engaging in tasks that involve theory-of-mind type reasoning – influence processing of potential FID sentences? Does it influence who people choose as the judge?  We used a priming paradigm where we investigated the effects of (i) cognitive, theory-of-mind based primes, (ii) empathy-triggering primes and (iii) a baseline condition. So far, our results suggest that theory-of-mind (tracking others' knowledge states, theory of mind) is more important to linguistic perspective-taking and FID understanding (switching perspective between narrator and character) than affective empathy.

As a whole, this research aims to shed light on how we process linguistic expressions which can but do not need to be speaker-oriented – how do we choose who the relevant judge is? Our findings show that comprehenders exhibit a fine-grained sensitivity to different kinds of expressions, and highlights the importance of considering top-down contextual factors as well as broader theory-of-mind considerations.