THE TRUTH ABOUT LYING: PRAGMATIC JUDGEMENTS ABOUT SPEAKER RELIABILITY ARE MADE ONLINE

Speakers' paralinguistic cues are known to influence listeners' pragmatic inferences about the speaker's state. Specifically, disfluencies (such as filled pauses) can serve as cues to speaker knowledge (Brennan & Williams, 1995) or certainty (Krahmer & Swerts, 2005). However, studies to date have focussed on off-line ratings, consistent with a traditional model of language comprehension which contends that listeners compute a literal, context-independent meaning of an utterance before taking into account wider pragmatic considerations (Hamblin & Gibbs, 2003). In contrast, a growing body of research shows that listeners rapidly integrate contextual information, suggesting that pragmatic inferencing does not necessarily take place post-literal message processing (e.g. van Berkum, 2008; van den Brink, 2012). Here, we present two experiments designed to examine whether, and how, the presence of disfluency in a speaker's message constrains pragmatic inferencing in listeners during online comprehension.

We use a novel eye- and mouse-tracking paradigm which provides an implicit measure of listeners' perception of speaker reliability. We investigate whether a speaker's perceived reliability varies with manner of delivery (fluent/disfluent), as well as the time-course with which this metalinguistic judgement is formed. In experiment 1, participants (n=21) viewed a series of visual displays showing two objects, one of which purportedly concealed a prize. Participants were told that a speaker would give instructions regarding which object to click on to gain the prize, but that the speaker might sometimes be dishonest. On critical trials, the speaker's instructions were either fluent (*The treasure is behind the frog*) or included an utterance-initial disfluency (*Um, the treasure is behind the frog*). Eye movement data demonstrated an effect of manner of delivery, with fluent utterances yielding more looks toward named target objects, and disfluent utterances yielding more looks to distractors. The difference emerged from 400 ms post-noun onset, suggesting that listeners exhibited this bias during early moments of sentence processing. Mouse movement data followed a similar trend, with effects emerging slightly later.

Experiment 2 (n=22) examined the role of utterance-medial disfluencies in inferences about a speaker's reliability. The production of phrase-initial filled pauses is thought to be linked to global, speech-planning issues (Clark & Fox Tree, 2002), while phrase-medial filled pauses have been largely attributed to lexical retrieval difficulties (e.g. Beattie & Butterworth, 1979). For listeners, phrase-medial disfluencies create an expectation toward objects perceived as more difficult to name (Arnold et al., 2007). This experiment was a replication of experiment 1, changing the disfluency location in disfluent utterances (*The treasure is behind thee, uh, frog*). Results for both eye- and mouse-tracking align closely with findings from experiment 1.

Our findings demonstrate that listeners make judgements about a speaker's reliability depending on how the linguistic information is conveyed. This judgement affects utterance interpretation during the initial stages of comprehension, in line with existing research showing early pragmatic effects. Moreover, listeners are less likely to believe disfluent utterances whether the speaker is disfluent at the start of the sentence, or hesitates mid-utterance, in contrast to previous work that suggests utterance-initial disfluency is uniquely associated with global planning difficulties. This suggests that both the content of an utterance and the way in which it is uttered will need to be taken into consideration to form the basis of a full account of online pragmatic interpretation.