

The role of facial expressions in the anticipation of turn-ends

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Across the world's languages, interlocutors in spontaneous conversation time their utterances to minimise gaps and overlaps between consecutive turns, resulting in remarkably fast turn-transitions (mode = 200ms; Stivers et al. 2009). Recent analyses indicate that the same turn-timing pattern extends to signed languages, provided that signers consider the end of the turn-final stroke (i.e. the end of the lexically-specified movement of signs) as the end of the turn itself (Sacks et al. 1974; Kita et al. 1998). Following this, addressees in signed conversation must anticipate current signers' upcoming turn-ends to plan and initiate their responses with minimal-gap-minimal-overlap timing (similar to spoken conversation; Sacks et al. 1974; De Ruiter et al. 2006). We tested whether signers could anticipate the ends of turn-final strokes by adapting a turn-end prediction measure originally designed for spoken language. 52 deaf signers of NGT (Nederlandse Gebarentaal, Sign Language of the Netherlands) watched 80 short conversational video sequences. Each sequence contained a few seconds of context followed by a target turn, segmented from spontaneous NGT conversation (Example: <http://hdl.handle.net/1839/00-0000-0000-0020-6C0D-C@view>). Participants watched the context and then, when one signer disappeared, focused on the remaining signer and tried to press the button at the moment they anticipated the turn would end. Initial analyses indicated that NGT signers predict the end of turn-final strokes in NGT with accuracy comparable to Dutch speakers' predictions about turn-ends in Dutch (De Ruiter et al. 2006). Interestingly, turn-end prediction was earlier for questions than for non-questions. We now discuss the role of linguistic cues driving signers' early responses for questions.

We annotated each stimulus for a variety of facial and manual cues that might help signers predict turn-ends, using a combination of native signer intuition and Ekman's (1979) Action Units (AU). As previously reported, NGT content questions were often marked out by furrowed brows, and polar questions by brow raises (Coerts 1992). Brow movements were more frequent in questions (78.4%) compared to non-questions (23.2%). While AU1+2+4 was uniquely associated with questions, AU1+2 was found in both questions (35%) and non-questions (59%), presumably because AU1+2 is also associated with topic marking and conditionals (Coerts 1992). A linear mixed effects model fit to participants' button press latencies confirmed that questions with AU1+2+4 were anticipated to end earlier than questions with AU1+2.

Surprisingly, lexical cues to questionhood were weaker in our stimuli. Only 9.8% of questions included explicit question words. Meanwhile, 43.1% of questions included second-person references to the addressee ("you (guys)") – prototypically used when the speaker is asking the addressee something. Only 7.2% of non-questions used second-person references. In sum, our findings suggest that, in addition to lexical cues, facial cues play a clear role in turn boundary prediction in signed conversation.

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