Multimodal repair initiation in silent gesture communication games

In ordinary conversation we encounter problems in understanding our interlocutors. Fortunately we have an arsenal of resources for repairing such problems. In face-to-face conversation, interlocutors recruit a number of resources simultaneously to indicate that a problem has arisen (Schegloff, Jefferson, & Sacks, 1977). The body (Seo & Koshik, 2010), the face (Kendrick, 2015), and eye gaze (Manrique, 2016) can all be used along with the corresponding talk (or sign) to highlight a problem of hearing or understanding. However, in a context of limited interactive affordances, as in experiments in language evolution, are participants still able to signal repair effectively? Problems of understanding arise in these settings as participants negotiate form-meaning mappings in a novel communicative mode. In a silent gesture communication game participants acting as gesturer and guesser were required to disambiguate similarly gestured - and thus easily confusable - noun-verb pairs. Here repair became a vital resource for establishing optimal disambiguation strategies.

Other-initiated repairs were often performed with eye gaze and facial expressions. In instances of the guesser's returned gaze to the gesturer, either open or specific class repairs were initiated (Dingemanse & Enfield, 2015). Open class repairs, which indicate a general trouble of understanding, were performed with a furrowed brow which was accompanied by either a mouth frown or half-smile - the latter likely being a mitigating strategy to the face-threat other-repair can impart. Similarly, specific offers would incorporate mouth frowns or half-smiles as indications of try marking (Byun et al, forthcoming) in candidate understandings. A guessers' specific request saw the simultaneous use of a point to the gesture space with a brow raise hinting at the suggestive nature of the point's referent and the repair initiation itself.

Throughout the task, participants become entrained to the timing of gestures and guesses. Longer gaps between the end of the gesture and the guess could then signal a problem with the prior, akin to longer pauses in turn taking (Kendrick, 2015). The subtle cue to repair can be made more salient with facial gestures that are not visually directed at the gesturer (that is, no gaze return), but at the array of meanings in front of the guesser. As with those made to the gesturer, array-oriented displays of confusion included the furrowed brow and mouth frown. The averted eye gaze could again be a means to attenuate face-threat.

Self-initiated repairs, which typically arose in later iterations of the game, were made salient with simultaneous face and hand gestures. While the hands gestured the intended meaning, the face highlighted the self repair with a high brow raise. The brow raise laminates the current gesture as a repaired one in an attempt to draw specific attention to the repairable as a deviation from previously established conventions. Sometimes apologetic half-smiles accompanied these self-repairs.

Even with limited affordances, participants were able to make use of multimodal and interactive repair sequences - while simultaneously attending to the socio-pragmatic constraints on repair - to negotiate and establish signaling conventions.

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