

Gesture expressivity and emotional resonance in storytelling interaction

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Storytelling is driven by emotion. Its key function is a meeting of hearts: a resonance in the recipient(s) of the storyteller's emotion towards the story events (cf. Stivers 2008). How emotions in storytellings are expressed verbally has been shown by Labov (1972). How they are expressed gesturally is still seriously underresearched. Insights into how emotional resonance is achieved are beginning to flow from Physiological Interaction Research (e.g., Peräkylä et al. 2015). This paper aims to contribute to this line of inquiry. Its focus is on the role of gestures in emotion expression and emotion resonance in storytelling. The data come from the Freiburg Multimodal Interaction Corpus (FreMIC), which features not only CA transcriptions of video-recorded talk-in-interaction but also Electrodermal Activity (EDA) data on storytellers and story recipients (Rühlemann & Ptak, Under review).

Specifically, the paper asks two questions: does gesture expressivity increase toward the story climax and do such increases correlate with observable emotion contagion?

To approach these questions, gestures in storytellings were annotated by multiple raters on a micro-analytic level for gesture phases as well as for seven gesture-dynamic parameters: (i) Size (Dael et al. 2013), (ii) Force (Dael et al. 2013), (iii) Character view-point (McNeill 1992), (iv) Silence during gesture (Hsu et al., 2021: 1; Kendon 2004: 147; Siddle 1991: 247), (v) Presence of hold phase (Beattie 2016: 129; Gullberg & Holmquist 2002), (vi) Co-articulation with other bodily organs (Dael et al. 2013; Rühlemann 2022) and (vii) Nucleus duration (Kendon 2004). The annotations were implemented using a binary scale (true/false), evaluated for interrater reliability and further processed in what we call the Gesture Expressivity Index (GEI). The Index computes for each gesture an average value across all true/false ratings. Based on the gesture-specific averages in each story, a regression slope is calculated as an indication of how gesture expressivity *develops* from story beginning to story climax (for more detail, see Rühlemann 2022).

To examine how that outwardly displayed gesture expressivity relates to emotion as an inwardly experienced psychophysiological *experience* we measure phasic EDA responses by the storyteller and the story recipients at story climaxes and compare the magnitude of the EDA responses to the magnitude of the GEI-based regression slope.

Interim results suggest that both research questions can be answered in the positive: not only do gestures generally gain in expressivity as the storytelling progresses toward the climax; the EDA data also suggest that increased gesture expressivity is positively correlated with emotional resonance. Counterexamples and possible reasons for their lack or loss in gesture expressivity and emotion resonance are discussed.

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