

## Smiling in spontaneous dyadic signed interaction: disentangling feedback and alignment functions

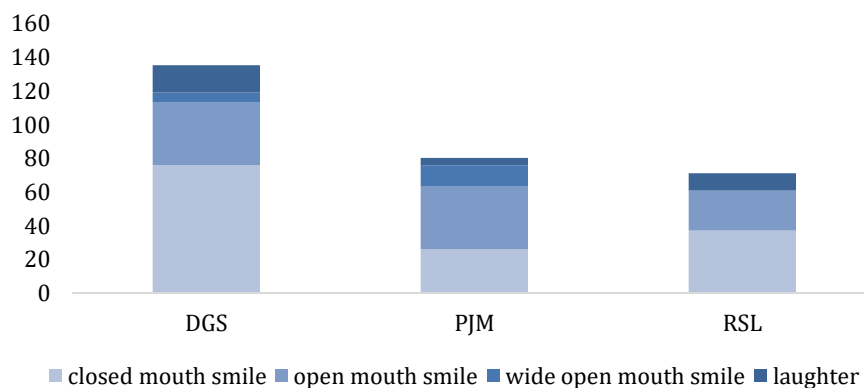
Anastasia Bauer & Anna Kuder (University of Cologne)

Any conversation among humans is rife with feedback and alignment, two linguistic behaviors often investigated separately. To the first strategy we count interactional moves that display some kind of stance towards another interlocutor's utterance (Allwood et al. 1992). Feedback signals are known to have different conversational functions: they may indicate a passive reciprocity, so that the interlocutor can continue with their turn (continuers); they may acknowledge and agree to what has been claimed (acknowledgment); they may state a piece of information as new (newsmarker); or evaluate a piece of information (assessment) (Schegloff 1982, Gardner 2001). The second conversational strategy known as alignment is a cross-participant repetition of any communicative behavior (Rasenberg et al. 2022). As the interlocutor sees the other producing a smile, they prime each other to re-use it, resulting in alignment (or mirroring, Bavelas et al. 1986) of smiling. But even though smiles and laughter are particularly susceptible to mimicking (Mui et al. 2018), some of them are produced as feedback signals (Brunner 1979).

This is the first exploratory study to focus on the extent to which different sign languages vary in the use of smiles and laughter functioning as feedback and/or alignment. We assume that the primary function of alignment smiles is to show similarity and togetherness (Bavelas et al. 1986), while the feedback smiles are used mostly as continuers and laughter as assessment. Feedback is known to vary considerably across individuals and across different types of contexts (Dideriksen et al 2023, Blomsma et al. 2024). This study aims to assess the possible cross-linguistic/cross-cultural differences in pragmatic functions of smiling behavior in spontaneous signed dyadic face-to-face conversations. We quantify and analyze the variability of different smiling behaviors in face-to-face interactions in three sign languages: German (DGS), Russian (RSL) and Polish (PJM).

We use the data extracted from the corpora of the three languages (Konrad et al 2022, Bauer & Poryadin 2023; Kuder et al 2022). Each data sample consists of approx. 1 hour of dyadic conversational data per language. We identified and annotated smiles in spontaneous conversational interactions of three signed languages and labeled them following the *Smiling Intensity Scale* (Gironzetti, Attardo, and Pickering, 2016). According to it, we differentiate four subtypes of smiling behaviors: closed mouth smile (s1), open mouth smile (s2), wide open mouth smile (s3) and laughing smile (s4). In each of the data samples we annotate all instances of smiling behavior in both participants, differentiating between smiles produced as feedback signals (when the addressee smiling is present only) and in alignment (when both interlocutors smile). As alignment cases we count all of the occurrences that were produced up to 300ms after the initial smile produced by the other interlocutor.

Addressee's smiling in signed dyadic face-to-face interactions



We report the smiling behavior frequency across all three languages, as there is anecdotal evidence suggesting that individuals in the Russian cultural context tend to exhibit greater reservation in their utilization of smiling. We aim to investigate whether this holds for RSL users when compared to users of other signed languages. Further, we want to report on differences in communicative functions

of smiles disentangling feedback from alignment. We specifically analyze whether formal properties of smiling on the intensity scale (e.g. closed vs. (wide) open mouth smile) influence its conversational function. We hypothesize that smiles rated lower on the intensity scale predominantly serve as feedback, while higher intensity smiles are more likely to be associated with alignment. While data analysis is still ongoing, our initial findings suggest that the intensity scale matters and the preliminary results show that DGS users display approx. twice as many smiles as RSL users, while PJM users come closer to RSL than DGS users (s. Fig. 1).

## References:

- Bauer, Anastasia, and Roman Poryadin. 2023. "Russian Sign Language Conversations." Data Center for the Humanities (DCH). <https://doi.org/10.18716/DCH/A.00000028>.
- Allwood, J., Nivre, J., Ahlsén, E. (1992). On the Semantics and Pragmatics of Linguistic Feedback. *Journal of Semantics*, 9(1), p. 1–26, doi:10.1093/jos/9.1.1
- Bavelas, J.B., Black, A., Lemery, C.R., Mullett, J. (1986). "I show how you feel": Motor mimicry as a communicative act. *Journal of Personality and Social Psychology*, 50, p. 322–329.
- Blomsma, Peter, Julija Vaitonyté, Gabriel Skantze, and Marc Swerts. 2024. "Backchannel Behavior Is Idiosyncratic." *Language and Cognition*, February, 1–24. <https://doi.org/10.1017/langcog.2024.1>.
- Brunner, L.J. (1979). Smiles can be back channels. *J Pers Soc Psychol.*, 37, p.728–734.
- Dideriksen, Christina, Morten H. Christiansen, Kristian Tylén, Mark Dingemanse, and Riccardo Fusaroli. 2023. "Quantifying the Interplay of Conversational Devices in Building Mutual Understanding." *Journal of Experimental Psychology: General* 152 (3): 864–89. <https://doi.org/10.1037/xge0001301>.
- Gardner, R. (2001) When Listeners Talk: Response tokens and listener stance. *Pragmatics & Beyond New Series*, 92, Amsterdam: John Benjamins Publishing Company, doi:10.1075/pbns.92.
- Gironzetti, Elisa, Salvatore Attardo, and Lucy Pickering. 2016. "Smiling, Gaze, and Humor in Conversation: A Pilot Study." In *IVITRA Research in Linguistics and Literature*, edited by Leonor Ruiz-Gurillo, 14:235–54. Amsterdam: John Benjamins Publishing Company. <https://doi.org/10.1075/ivitra.14.12gir>.
- Konrad, Reiner, Thomas Hanke, Gabriele Langer, Susanne König, Lutz König, Rie Nishio, and Anja Regen. 2022. "Public DGS Corpus: Annotation Conventions (Revision 4.1)." Project Note AP03-2018–01. Project Notes of the DGS Korpus Project. Hamburg, Germany: DGS-Korpus project, IDGS, Hamburg University. <https://doi.org/10.25592/uhhfdm.10251>.
- Anna Kuder, Joanna Wójcicka, Piotr Mostowski, Paweł Rutkowski (2022). "[Open Repository of the Polish Sign Language Corpus: Publication Project of the Polish Sign Language Corpus](#)". In: *Proceedings of the LREC2022 10th Workshop on the Representation and Processing of Sign Languages: Multilingual Sign Language Resources* (Marseille, France). Ed. by Eleni Efthimiou, Stavroula-Evita Fotinea, Thomas Hanke, Julie A. Hochgesang, Jette Kristoffersen, Johanna Mesch, Marc Schulder. Paris, France: European Language Resources Association (ELRA), pp. 118-123. ISBN: 979-10-95546-86-3. ACL: [2022.signlang-1.18](#).
- Mui, P.H.C., Goudbeek, M.B., Roex, C., Spierts, W., Swerts M.G.J. (2018). Smile Mimicry and Emotional Contagion in Audio-Visual Computer-Mediated Communication, *Frontiers in Psychology* 9, doi:10.3389/fpsyg.2018.02077
- Rasenberg, M., Pouw W, Özyürek A, Dingemanse M. (2022). The multimodal nature of communicative efficiency in social interaction. *Scientific Reports*, 12(1):19111, doi:10.1038/s41598-022-22883-w.
- Schegloff, EA. (1987). Analyzing Single Episodes of Interaction: An Exercise in Conversation Analysis. *Social Psychology Quarterly*, 50(2), p. 101–114, doi:10.2307/2786745.