

Multimodal feedback signals: Comparing response tokens in co-speech gesture and sign languages



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Introduction

Feedback signals (see Yngve 1970, Schegloff 1987)

Interactive moves that display some kind of uptake of the information represented by another person's utterance and can be marked by various multimodal cues: **vocal** (e.g., *mmh*), **manual** (e.g., gestures) and/or **non-manual** (e.g., nods, eye gaze, body movements, facial expression) and may indicate active involvement, comprehension or trouble.

Response tokens (see Gardner 2001:2)

- continuers
- acknowledgment tokens
- newsmarks
- assessments

Sequential context of continuer vs. acknowledgment (inspired by Dingemans et al. 2022)

Continuer

sind dann mit taxi dahin gefahren weil kein bus und so mehr fuhr nod nod nod nod mhm

also nach marhofen weil da noch ne bekannte von dem anderen von - hans heißt der nod nod mhm ehm dort war

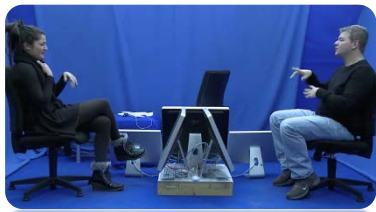
Acknowledgment

ja das problem war ja auch wegen dieser wegen dieser malariaanprophylaxe nod nod mhm äh genau

nimmste ja tabletten nod nod mhm

Comparison of two signed and two spoken languages

Annotated in ELAN (The Language Archive, MPI Nijmegen, e.g. Brugman & Russel 2004)



Russian Sign Language (RSL) (Burkova 2015)

Russian (Bauer forthcoming.)

German Sign Language (DGS) Hanke et al. 2020

German (Hoffmann & Himmelmann 2009)

22 minutes
2 dyads
2 men, 2 women

26 minutes
3 dyads
5 women

28 minutes
3 dyads
3 men, 3 women

20 minutes
3 dyads
2 men, 3 women

Tier "feedback category"

acknowledgment	<i>mm, yeah</i>
continuer	<i>mm, hm</i>
newsmark	<i>really? Oh?</i>
assessment	<i>cool! WOW!</i>

Tier "head movement"

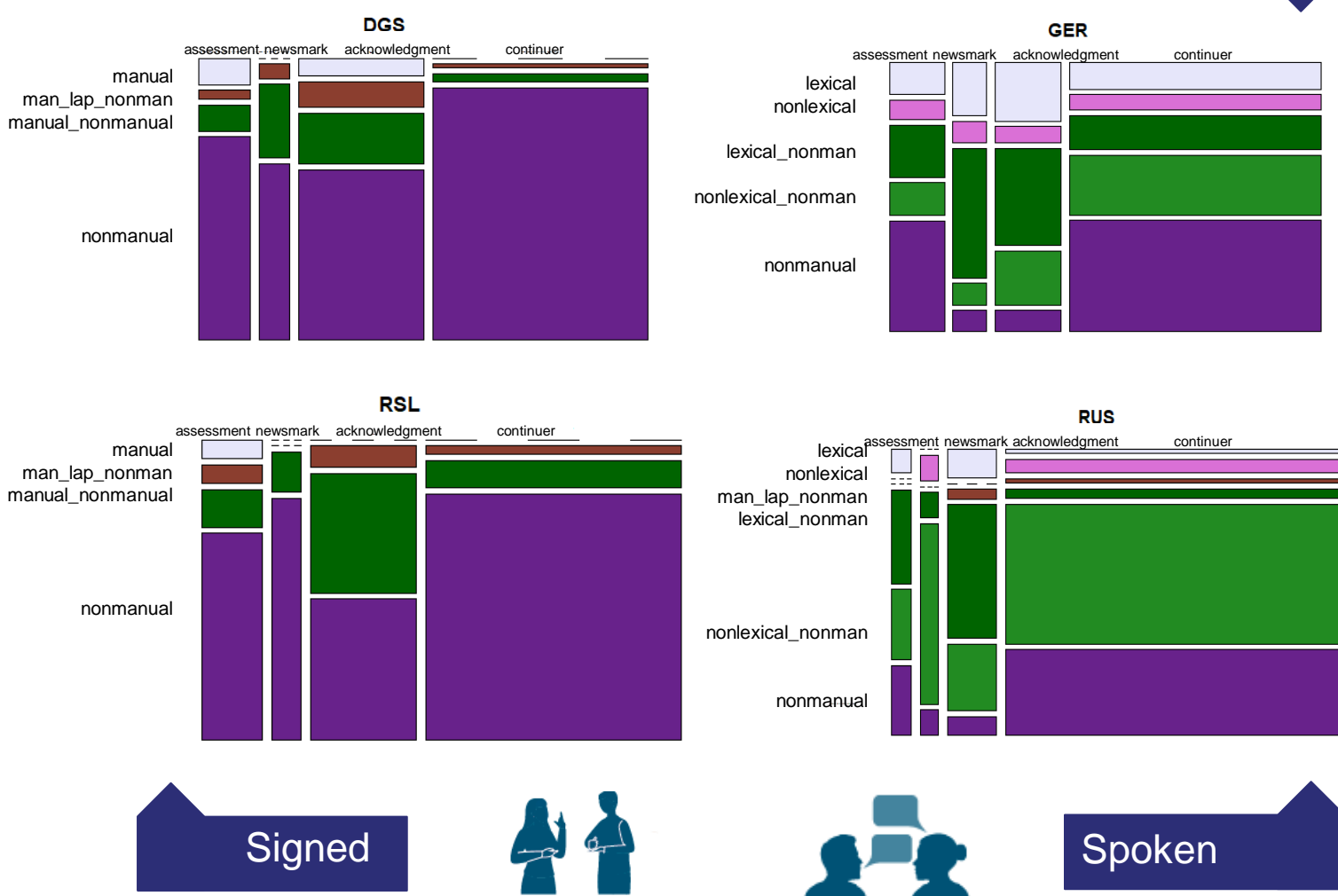
sn	small nod
mn	mixed nod
lnn	multiple large nods
ln	large nod
htf	head tilt forward
hs	head shake
hnn	multiple head nods
hb	head back

Tier "feedback type"

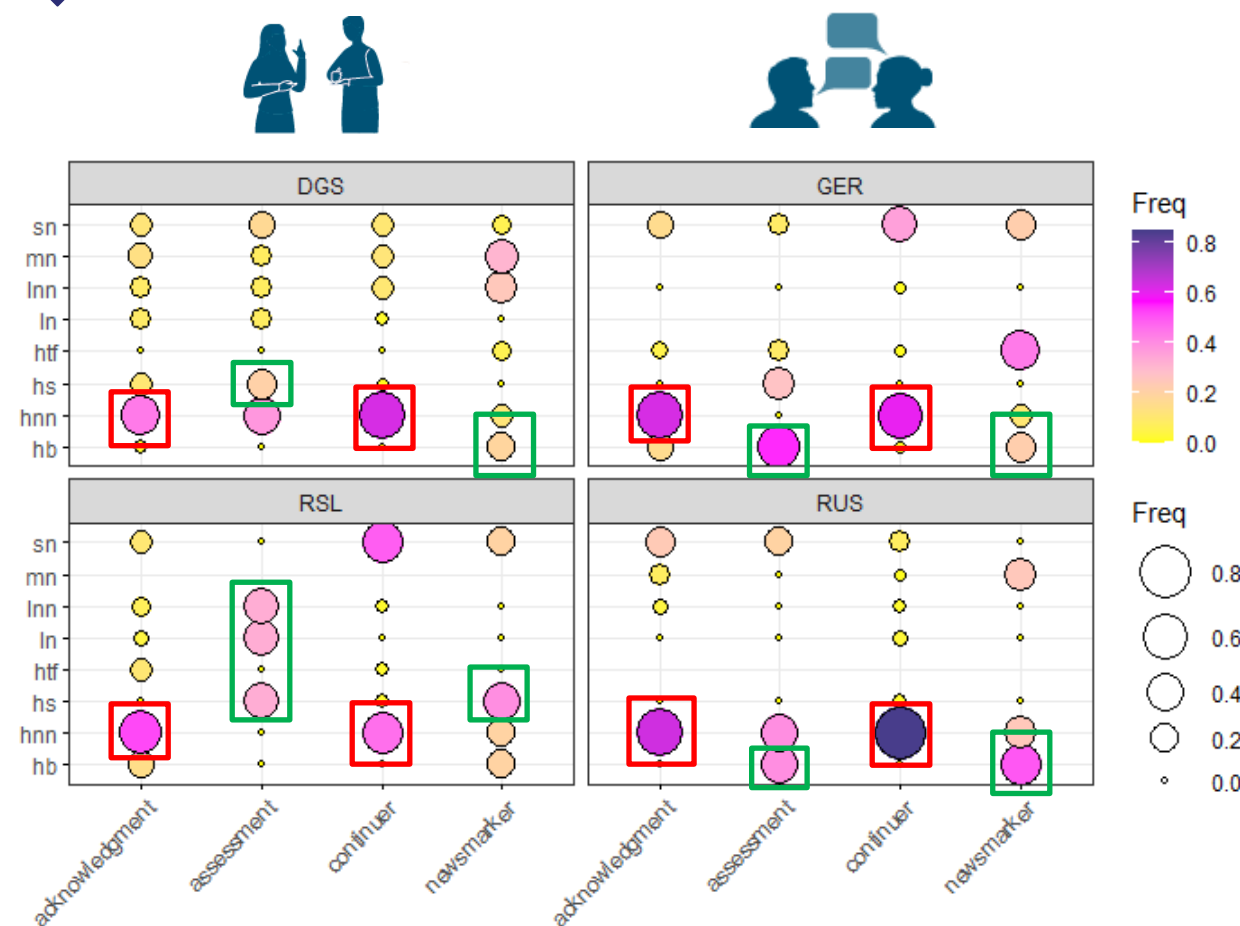
lexical	yes
lexical_nonmanual	yes, nod
nonlexical	<i>mm, huh</i>
nonlexical_nonmanual	<i>mm, head shake</i>
nonmanual	head, eyebrows, mouth movement, eyes (except blinks), body
manual	YES, Palm-up
man_lap_nonmanual	sign, gesture in the lap
manual_nonmanual	

Data and annotations

Feedback type: Nonmanual cues pervasive in signed and spoken



Head movements



Results

Preliminary findings

Feedback type

Do addressees produce similar feedback signals in different language modalities?

YES!

- **Nonmanual feedback** is pervasive in both language modalities -> spoken languages rely on visual cues just as sign languages
- **Continuers** are the most frequent type of feedback response tokens
- In signed languages, nonmanual only feedback signals are more common than in spoken languages, consistent with Mesch (2016)

face-to-face interaction



Head movements

- **Continuers and acknowledgments** are predominantly expressed by multiple shallow head nods in all languages
- Head nodding mostly marks continuers and acknowledgments, other head movements are mostly reserved for **assessments and newsmarks**

Head movements

Do head movements differentiate feedback categories?

YES!

References

Bauer, A. forthcoming. Multimodal corpus of interaction spoken Russian.
 Burkova, S. 2015. Russian Sign Language Corpus. [http://rsl.nstu.ru/]
 Brugman, H. & Russel, A. 2004. Annotating multi-media / multi-modal resources with ELAN. In Proceedings of the 4th International Conference on Language Resources and Language Evaluation (LREC 2004). Paris: ELRA, 2065–2068.
 Dingemans, M., Liesenfeld, A., & Woensdrecht, M. 2022. Convergent Cultural Evolution of Continuers (mmhm). PsyArXiv.
 Gardner, R. 2001. When Listeners Talk: Response tokens and listener stance. John Benjamins Publishing Company. https://doi.org/10.1075/pbns.92
 Hanke, T., Schulder, M., Konrad, R. & E. Jahn (2020). Extending the Public DGS Corpus in Size and Depth. Efthimiou, Eleni et al. (Eds.): Proceedings of the LREC2020, Paris, France: European Language Resources Association, 75–82.

Hoffmann, B. & Himmelmann, N.P. 2009. Münster Videokorpus Alltagsgespräche.
 Kassambra, A. 2019. Ggpubr: 'Ggplot2' based publication ready plots. R package. (Version 0.2.4.). Retrieved from https://CRAN.R-project.org/package=ggpubr
 Mesch, J. 2016. Manual backchannel responses in signers' conversations in Swedish Sign Language. Language & Communication, 50, 22–41. https://doi.org/10.1016/j.langcom.2016.08.011
 R Core Team. 2023. R: A language and environment for statistical computing. Vienna, Austria. Retrieved from https://www.R-project.org/
 Schegloff, E. A. 1987. Analyzing Single Episodes of Interaction: An Exercise in Conversation Analysis. Social Psychology Quarterly 50(2), 101–114. https://doi.org/10.2307/2786745
 Yngve, V. 1970. On getting a word in edgewise. Papers from the Sixth Regional Meeting, Chicago Linguistic Society, 567–578.

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