

A DISTRIBUTIONAL ANALYSIS OF LAUGHTER ACROSS TURNS AND UTTERANCES

BOGDAN LUDUSAN, MAIK WESEMANN AND PETRA WAGNER
firstname.lastname@uni-bielefeld.de

AIM

Our study aims at providing a better understanding of the use of laughter in conversation, in relation to linguistic levels pertinent to discourse building. We hope to provide a more complete view of how laughter is distributed, considering:

- two linguistic organization levels: utterances and turns;
- two types of laughter classes: laughs and speech-laughs;
- three different languages: French, German and Mandarin Chinese.

METHODS AND MATERIALS

We employed the DUEL corpus [1], containing spontaneous interactions in French, German and Mandarin Chinese, and having manual annotations for utterances, turns and laughter (laughs and speech-laughs).

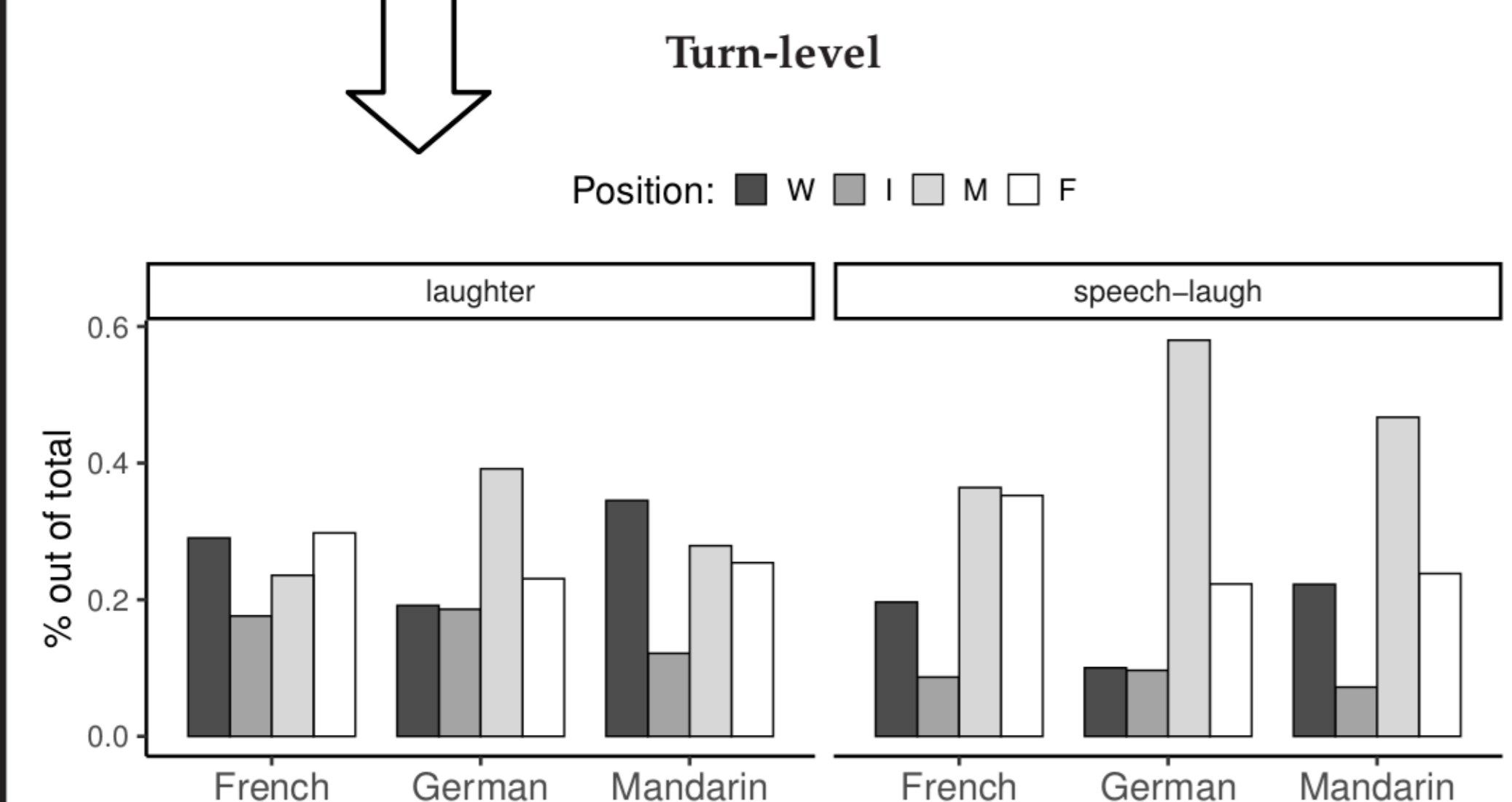
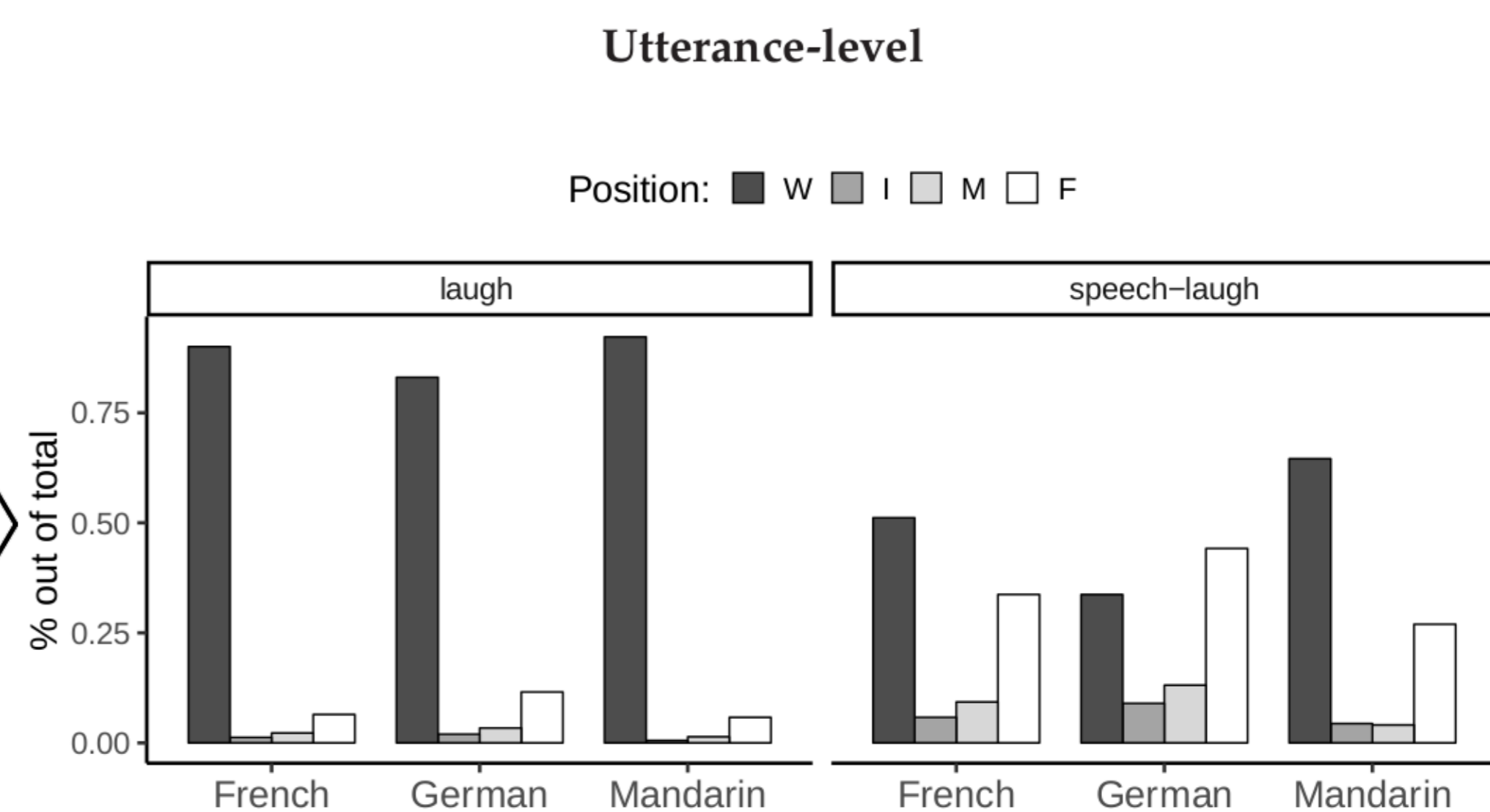
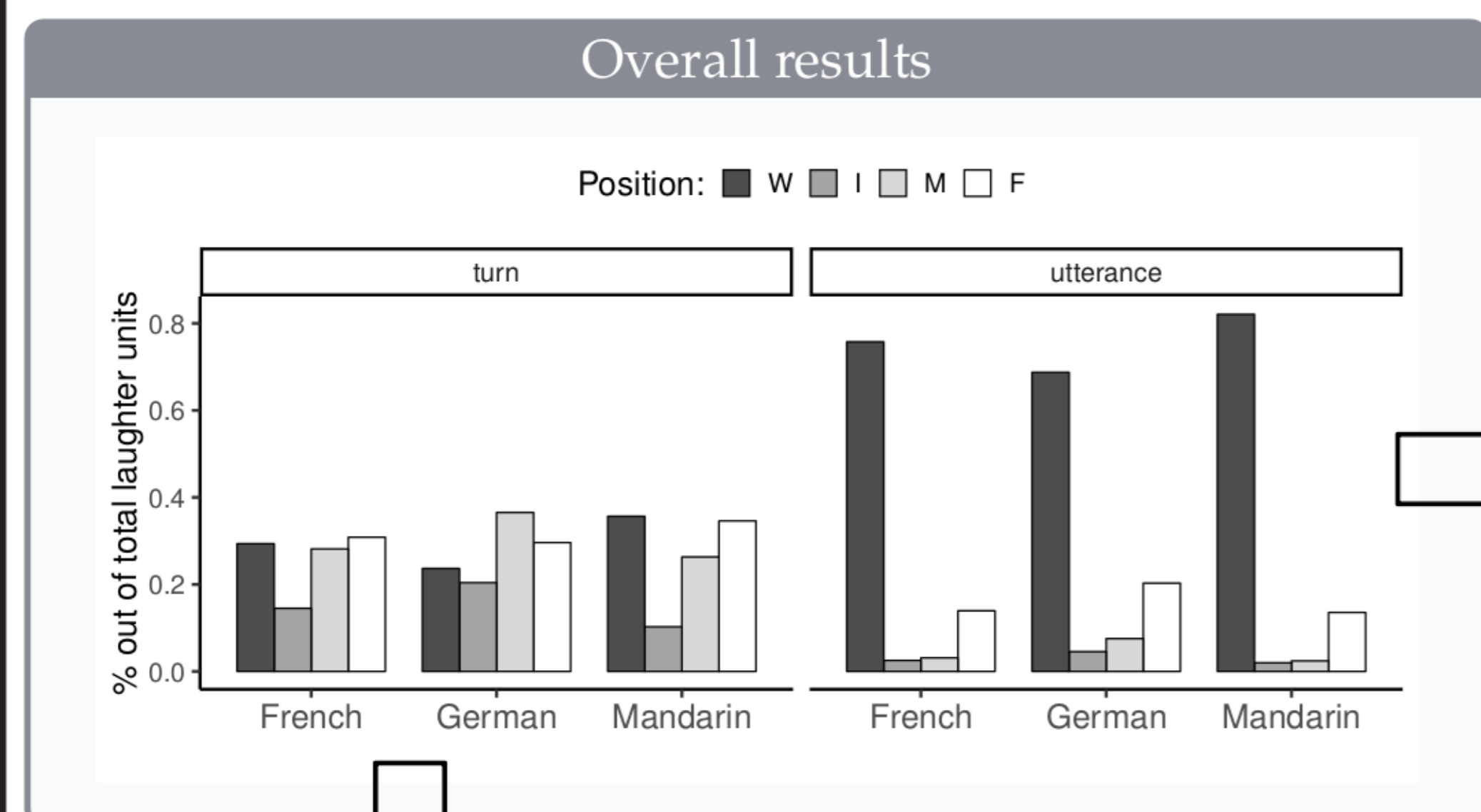
We further annotate units in the Film Script part (10 dyads Fr, De; 9 dyads Zh):

- W, the whole unit is composed only of laughter events;
- I, one or more consecutive laughter events are found at the beginning;
- M, speech at the beginning and end and at least a laughter event within;
- F, one or more consecutive laughter events are found at the end of the unit.

The following analyses were performed, for each level:

- counts of: units produced by each speaker, units containing laughter events and units with laughter occurring in each of the four annotated positions;
- Pearson's Chi-squared tests and Wilcoxon signed-rank tests.

RESULTS



Percentage of the total amount of laughter events at the given utterance position which are found at that specific turn position

Utt pos	Turn pos	French	German	Mandarin
W	W	.337	.241	.366
	I	.179	.208	.114
	M	.199	.348	.291
	F	.284	.203	.229
I	I	.294	.421	.235
	M	.706	.579	.765
M	M	1	1	1
	F	.419	.563	.576
F	M	.581	.437	.424
	F			

DISCUSSION AND CONCLUSIONS

- in line with previous studies looking at the distribution of laughter both at the utterance level [2, 3] and at the turn level [4];
- distribution of laughter differs at the two levels, with more important differences between languages at the turn level → a more universal way of using laughter at the utterance level than at the turn level;
- laughter distribution varies with the type of laughter (see also [3] for the utterance level), differences found at both analysis levels;
- focused on a quantitative analysis → link next to discourse-level phenomena.

REFERENCES

- [1] J. Hough, Y. Tian, L. de Ruiter, S. Betz, S. Kousidis, D. Schlangen, J. Ginzburg. DUEL: A multi-lingual multimodal dialogue corpus for disfluency, exclamations and laughter. In *LREC2016*, pp. 1784–1788.
- [2] B. Bigi, R. Bertrand. Laughter in French spontaneous conversational dialogs. In *LREC2016*, pp. 2168–2174.
- [3] A. Batliner, S. Steidl, F. Eyben, B. Schuller. On laughter and speech-laugh, based on observations of child-robot interaction. In *arXiv preprint arXiv:1908.11593*.
- [4] L. Gavioli. Turn-initial versus turn-final laughter: Two techniques for initiating remedy in English/Italian bookshop service encounters. In *Discourse Processes* 19(3), 369–384.