

# Form-function pairings of filled pauses in German?



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**Research question:** Do functional differences effect the phonetic properties of fillers?

**Definition:** Filled pauses/fillers are

- mostly a vowel or a vowel followed by a nasal (Lickley 2015)
- non-lexical entities
- non-extralinguistic (no breathing) entities
- no backchanneling entities
- not necessarily linked to other speech segments

**Method:** Variationist analysis of fillers and dialogue structure

**Variable 1 (filled pause form) with 3 variants:**

- In German often [ə: ə:m ε: ε:m] → vocalic/vocalic-nasal fillers (annotation tag: **fv**)
- Clicks (Trouvain 2015) → click fillers (annotation tag: **fc**)
- Glottal stop sequences [ʔʔʔ:] (Belz 2017) → glottal fillers (annotation tag: **fg**)

**Variable 2 (dialogue structure as function) with 15 variants:**

– Dialogue structure is approached with the scheme of Carletta et al. (1997), with modifications.

Value	Description	Value	Description
<b>Initiating moves</b>		<b>Response moves</b>	
<i>instruct</i>	Instruction	<i>acknowledge</i>	Interlocutor has been understood
<i>explain</i>	Explanation or narrative not directly elicited	<i>reply-yes</i>	Positive reply to polar question
<i>explain-trunc</i>	Truncated <i>explain</i>	<i>reply-no</i>	Negative reply to polar question
<i>query-align</i>	Alignment query, checking of information	<i>reply-unsure</i>	No clear positive or negative reply to polar question
<i>backchannel</i>	Backchanneling	<i>reply-wh</i>	Answer to wh-question
<i>query-yn</i>	Polar question	<i>reply-wh-unsure</i>	Interlocutor is not sure or does not know the answer
<i>query-wh</i>	Wh-question	<i>reply-align-yes/no</i>	Positive/negative answer to <i>query-align</i>
<i>ready</i>	Ready signal		

**Data:** 8 task-free dialogues of GECO (Schweitzer and Lewandowski 2013)

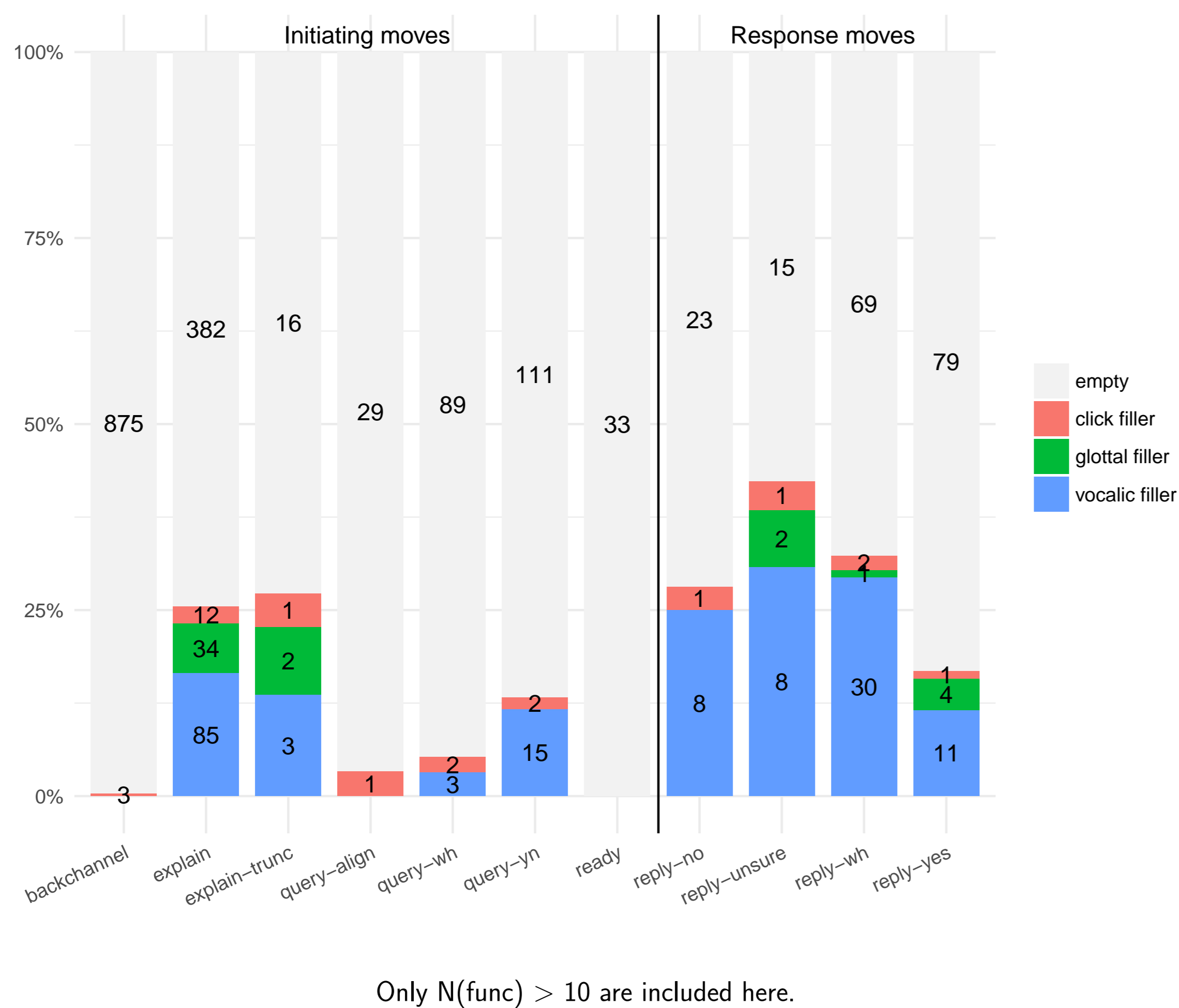
Speaker	Speech dur. (min)	Words	Fillers	Filler %
1 A	7.60	1616	16	0.99
2 C	10.53	2153	48	2.23
3 K	12.32	3046	55	1.81
4 D	9.56	2180	36	1.65
5 F	8.00	1712	11	0.64
6 H	9.26	2255	44	1.95
7 J	10.77	2900	25	0.86
8 M	10.46	2404	32	1.33
Σ	78.49	18266	267	1.46

Annotation with Praat (Boersma 2001), corpus query with emuR (Winkelmann et al. 2016), analysis with R (R Core Team 2016).

## Filler type and dialogue structure

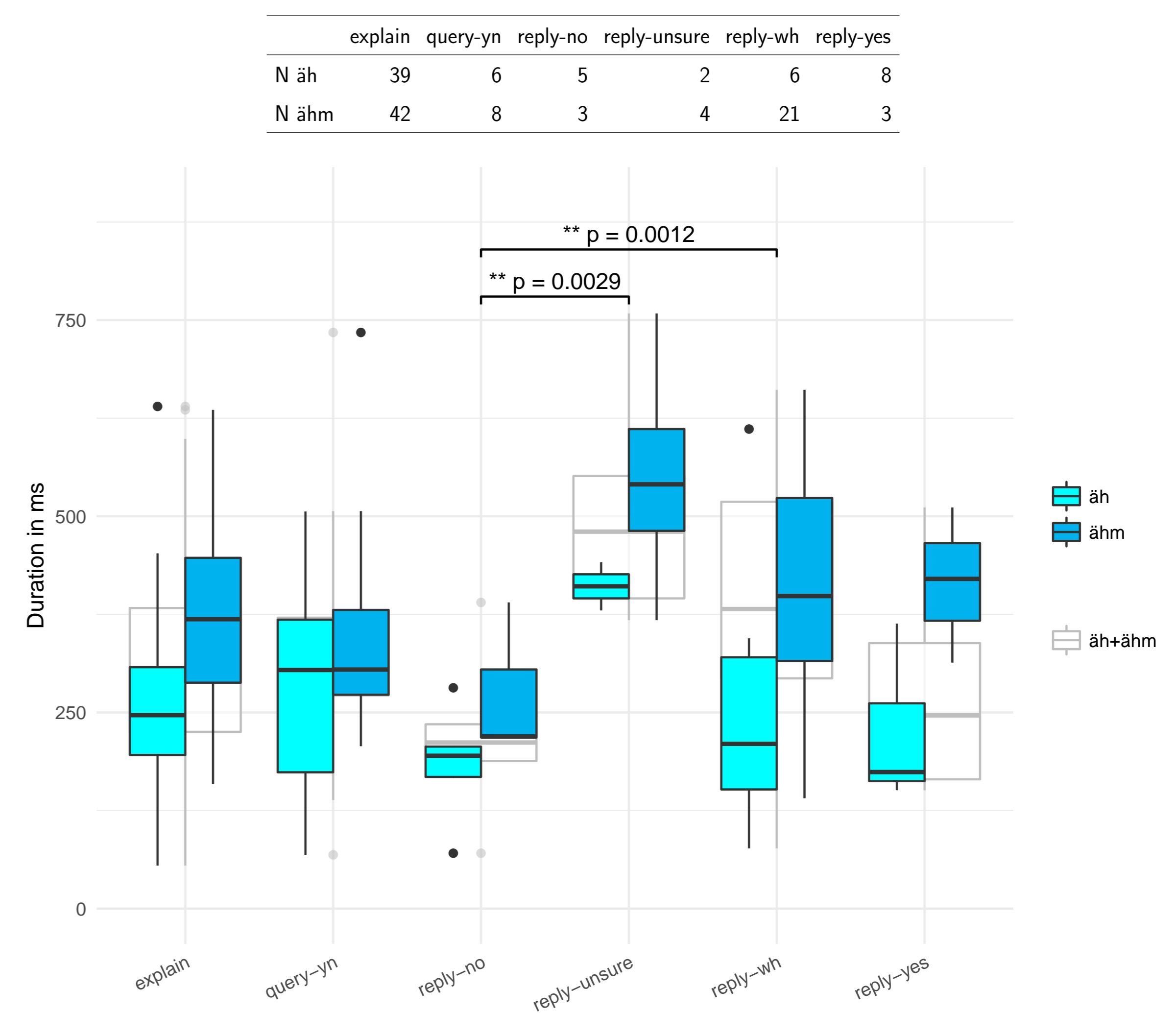
**Initiating moves:** Narrative segments (*explain*) and yes-no-questions (*query-yn*) show most fillers in this group.

**Response moves:** Fillers are used within every type of reply, especially within wh-replies (confirming (Lickley 2001)).



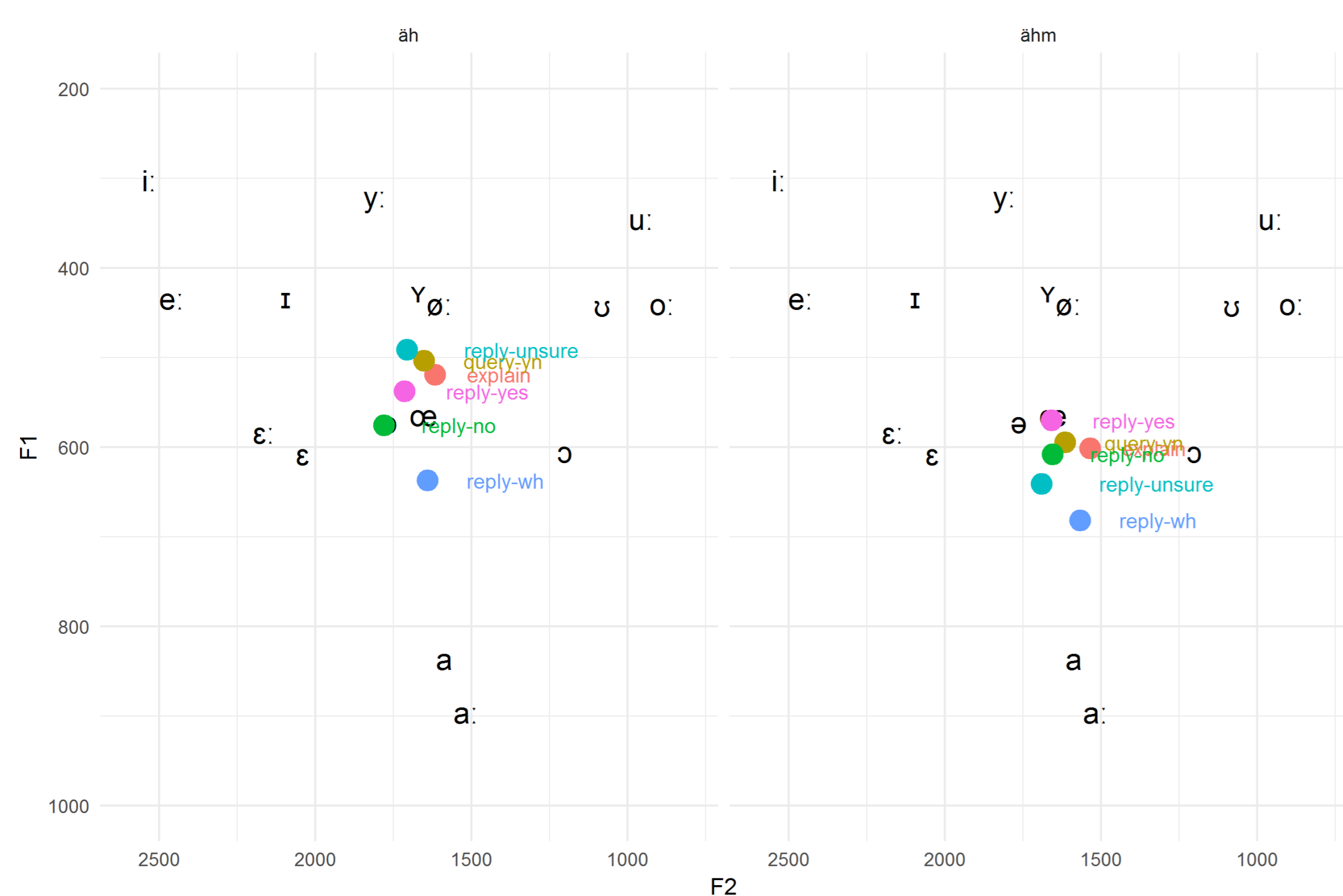
## Vocalic/vocalic-nasal fillers and duration

Durations differ significantly for fillers within negative replies to polar questions (*reply-no*) as opposed to uncertain replies (*reply-unsure*) and replies to wh-questions (*reply-wh*).



## Vowel quality

Vowels within vocalic-nasal fillers (*ähm*) seem to be lower and less fronted. A linear mixed model with shows no effect of dialogue structure on vowel quality ( $F \sim \text{func} * (\text{äh} | \text{ähm}) + (1 + (\text{äh} | \text{ähm}) | \text{speaker})$ ). However, the combination of F1 and F2 might reflect the movement shown below more adequately.



Vowel space taken from standard German female vowel formants in Sendmeier and Seebode (2006).

## Conclusion

Filed pauses are highly variable. However, some systematicity can be found with respect to dialogue structure.

- All three filler types ( **vocalic/vocalic nasal** , **click** , **glottal** ) occur in almost every dialogue structure, except for *backchanneling*, *query-align* and *ready* moves (N < 3).
- Vocalic/vocalic-nasal fillers within negative replies to polar questions are significantly shorter than voc./voc.-nas. fillers within unsure replies or replies to wh-questions.
- Vowel quality differs for vocalic and vocalic-nasal forms. This could be due to coarticulatory effects of the following nasal in *ähm*. However, the result of the separate analysis of F1 and F2 needs to be verified in a combined F1+F2 approach.

Future work will address

- a cluster analysis of vowel formants
- the context directly adjacent to fillers
- a closer inspection of the category *explain*

## References

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