Turn-final creaky voice across the life-span in Tyneside English

Mirjam Eiswirth, James Grama, Isabelle Buchstaller

Sociolinguistics Lab

University of Duisburg-Essen

Mirjam.Eiswirth@uni-due.de

Tracing Language Variation and Change across the Lifespan

Life-span change: theoretical background

- **Critical period hypothesis** (Lenneberg 1967, Penfield and Roberts 1959, Vanhove 2013)
- **Apparent time hypothesis**:
  - Works because speakers generally show stability across the life span

- **Panel studies**: follow the same individual over time

- **Refining the apparent time hypothesis**: intra-speaker linguistic lability

→ Post-adolescent linguistic malleability (Sankoff & Blondeau 2007, Harrington et al. 2000; Nahkola & Saanilahti 2004, Sankoff & Wagner 2006, 2011 inter alia)

→ "life-course perspective over a strict maturational explanation" (Donnellan & Lucas 2008:9)

Tracing Language Variation and Change across the Lifespan

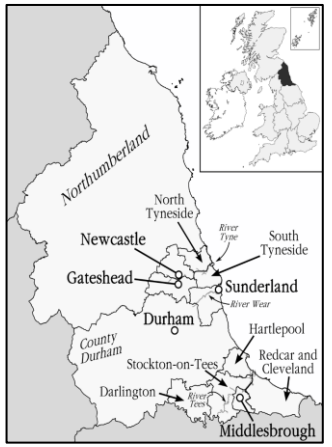
Interactional aspects in panel data

To date: focus on phonetic & morphosyntactic features

- Creaky voice – social and stylistic functions (Dallaston & Docherty, 2020; Esling, 1978; Stuart-Smith, 1999; Podesva 2013)
  - Sex
  - Socioeconomic status
  - Region
  - Coolness, toughness, education, being knowledgeable
- Turn-final use of creaky voice (Henton & Bladon, 1988; Ogden 2006; Podesva, 2013)

Tracing Language Variation and Change across the Lifespan

Data



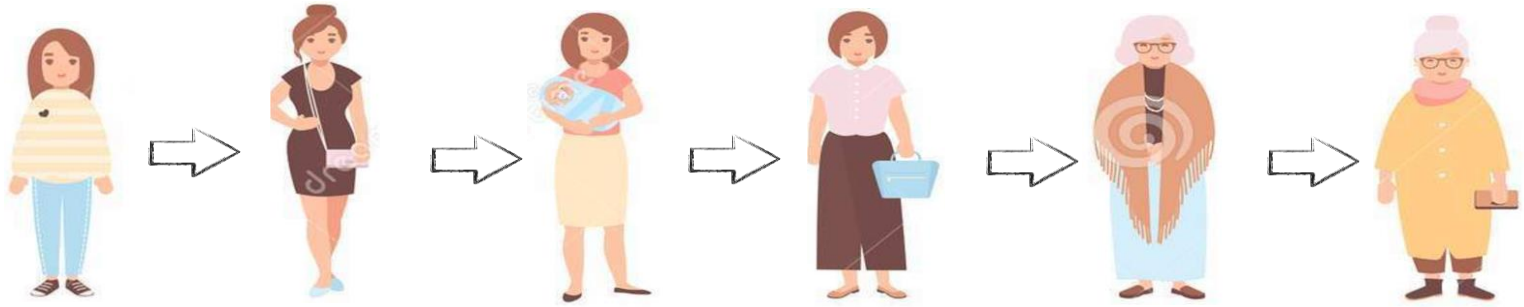
- Urban community: Tyneside, North East of England

Panel sample:

- Interviews with the same speaker at 3 timepoints

Year of recording	1971	2013	2019
Age:	20-30	65-75	70-80

Old Panel
covering the stages that "give age meaning" (Eckert 1997: 167)



Tracing Language Variation and Change across the Lifespan

Defining turns

a spate of talk produced by one participant while they are holding the floor (SSJ 1974, Schegloff 1995)

- **Length: Categorical coding for short/long**
  - Short ~ 1-3 TCUs, classical question-answer sequences
  - Long ~ >3 TCUs, more expansive answers, “doing being an interviewee”

- **Type of floor transition:**
  “clear turns” = No overlap, no competition for the floor
  “unclear turns” = Overlap, competition for the floor

Tracing Language Variation and Change across the Lifespan

Example of short clear turn (Aidan T1)

Talking about potentially moving out of the Tyneside area

INT: so you'd probably miss it [Tyneside] a bit but you wouldn't eh

AID: suppose I would eh

(.7)

INT: yeah (.) are most of your eh (.) friends and acquaintances you know do they mostly live around [here like]

Tracing Language Variation and Change across the Lifespan

Example of one long clear turn (Aidan T1)

INT: yeah and you're you're pretty close with your neighbours I suppose

AID: that‘s it (.)

AID: [course I’ve] lived along here all me life I know everybody

INT: [mhm]

(1.1)

INT: yeah

AID: more than eh eh on a (.) f- first name basis you know [eh

INT: [yeah yeah

Tracing Language Variation and Change across the Lifespan

Distribution of turns by type and length

	Short	**Long**	*Sum*
Clear	1171	985	*2156*
Unclear	114	122	*236*
Sum	*1285*	*1107*	*2392*

Tracing Language Variation and Change across the Lifespan

Distribution of turns by type and timepoint

T1 (1971):
classical interview question-answer style,

T2&3 (2013 & 2019):
more conversational

Tracing Language Variation and Change across the Lifespan

Data prep and extraction

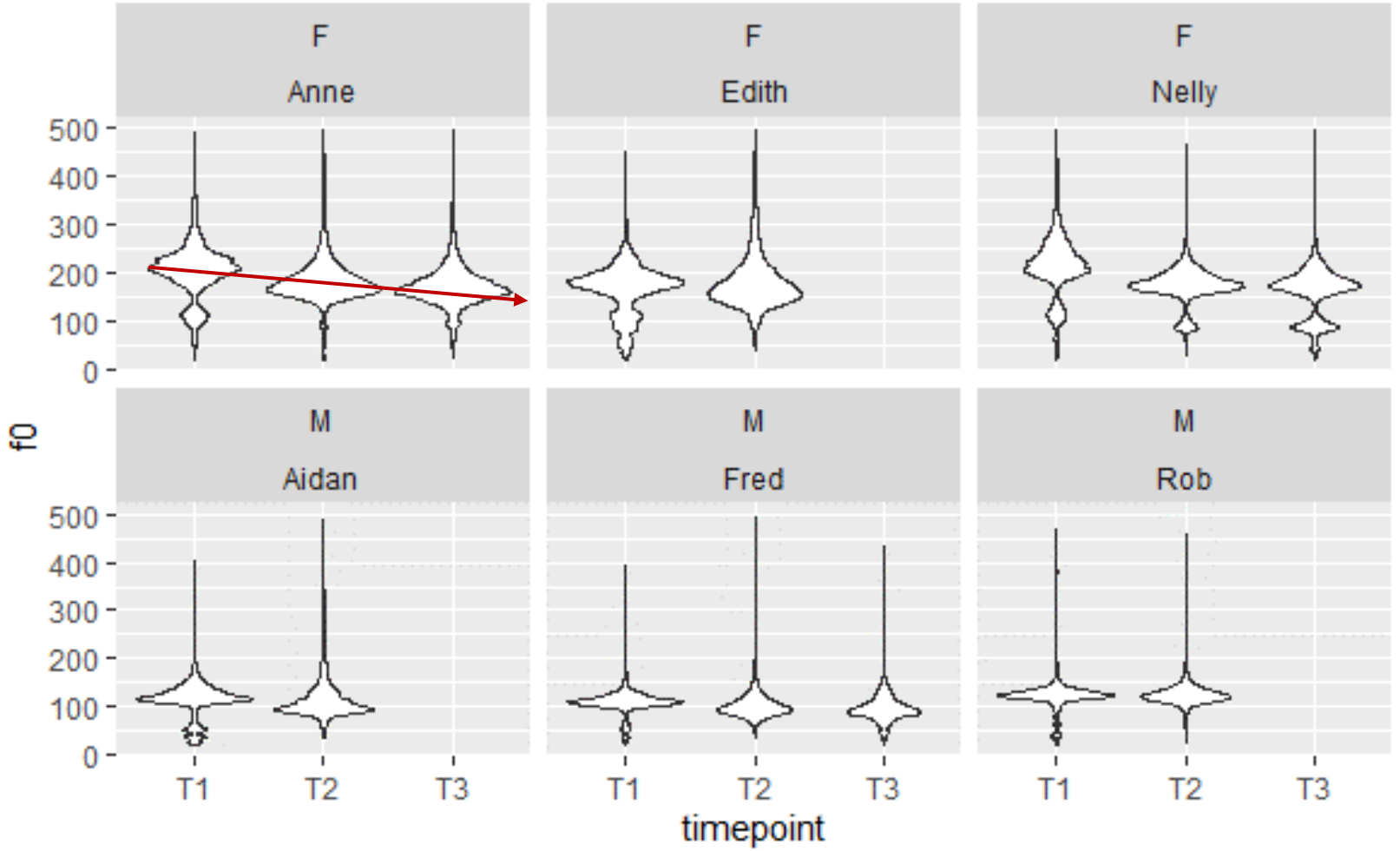
- Interviews transcribed and time-aligned in ELAN
- Uploaded to LaBB-CAT and force-aligned (Fromont & Hay 2012)

- F0 extraction via REAPER (Talkin 2015)
  - Min set to 20 Hz because the priority was accurate detection of low f0 characteristic of creak (cf. Dallastan & Docherty 2019)
  - 3 million f0 measurements at 5ms intervals

- Data analysis and visualisation in R

Tracing Language Variation and Change across the Lifespan

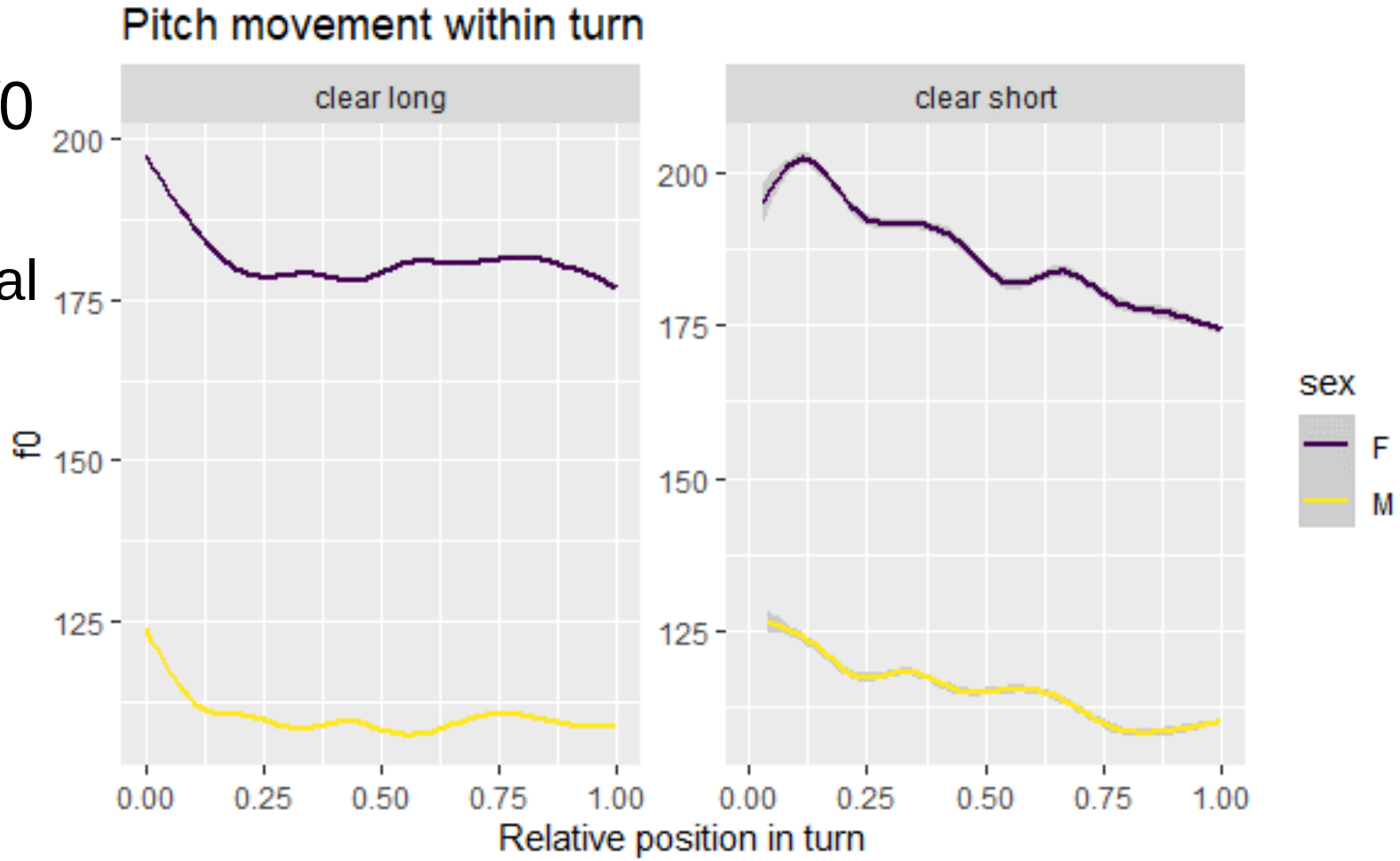
Pitch across the life-span by timepoint and speaker



Pitch over the course of the turn

- Women's f0 > men's f0
- Clear long:
  Higher onset, plateau, final fall
- Clear short:
  Overall fall

How about creak?



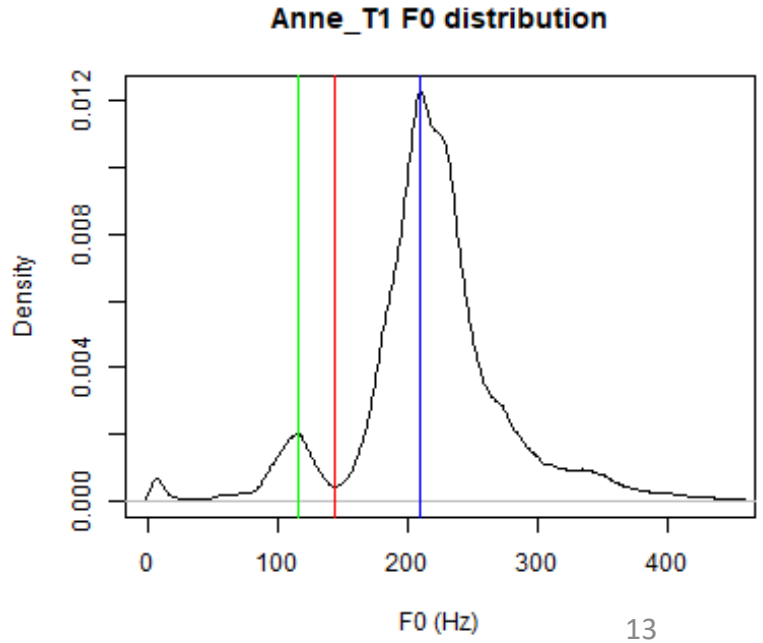
Tracing Language Variation and Change across the Lifespan

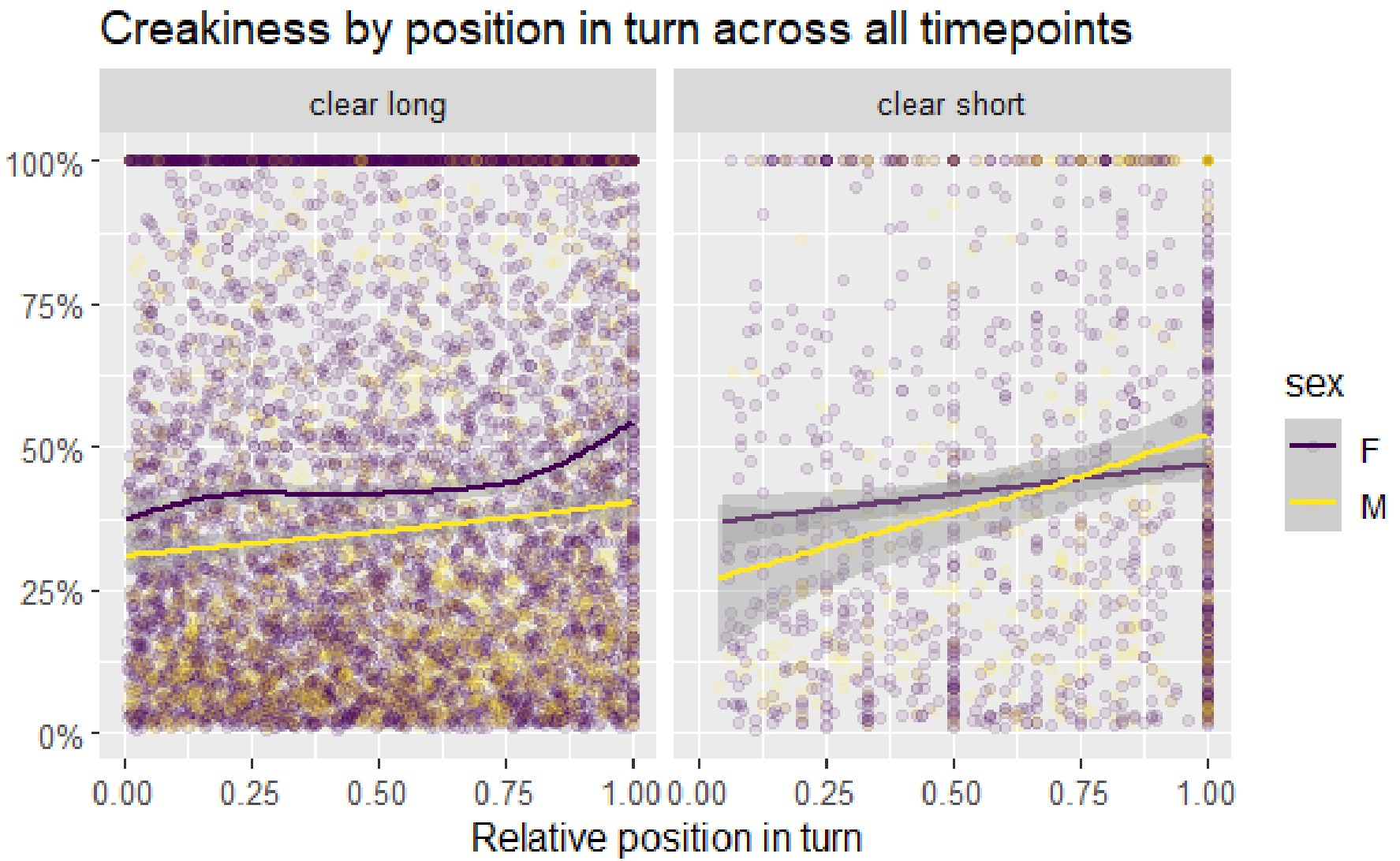
From pitch to creak

- Creak: Non-modal phonation characterised by low f0
  (Dallaston & Docherty 2019)

- F0 decreases with age (Harrington, Palethrope & Watson 2007; Reubold, U., Harrington, J., Kleber, F., 2010; Reubold, U., Harrington, J., 2017)

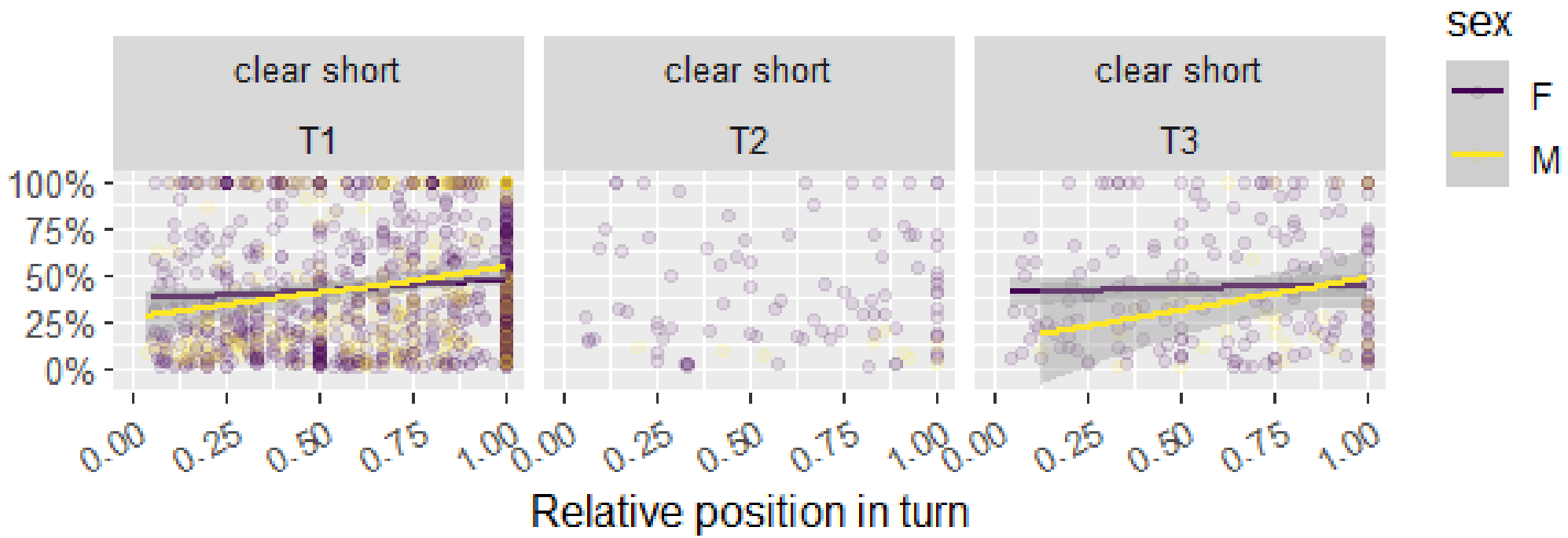
- Speaker- and time-point specific measure to determine cut-off for creak (Dallaston & Docherty 2019)
  - Mode
  - 2nd peak (lower)
  - Antimode (minimum between the modes)




Creakiness by position in turn across all timepoints
clear long
clear short
100%
75%
50%
25%
0%
0.00
0.25
0.50
0.75
1.00
Relative position in turn
sex
F
M

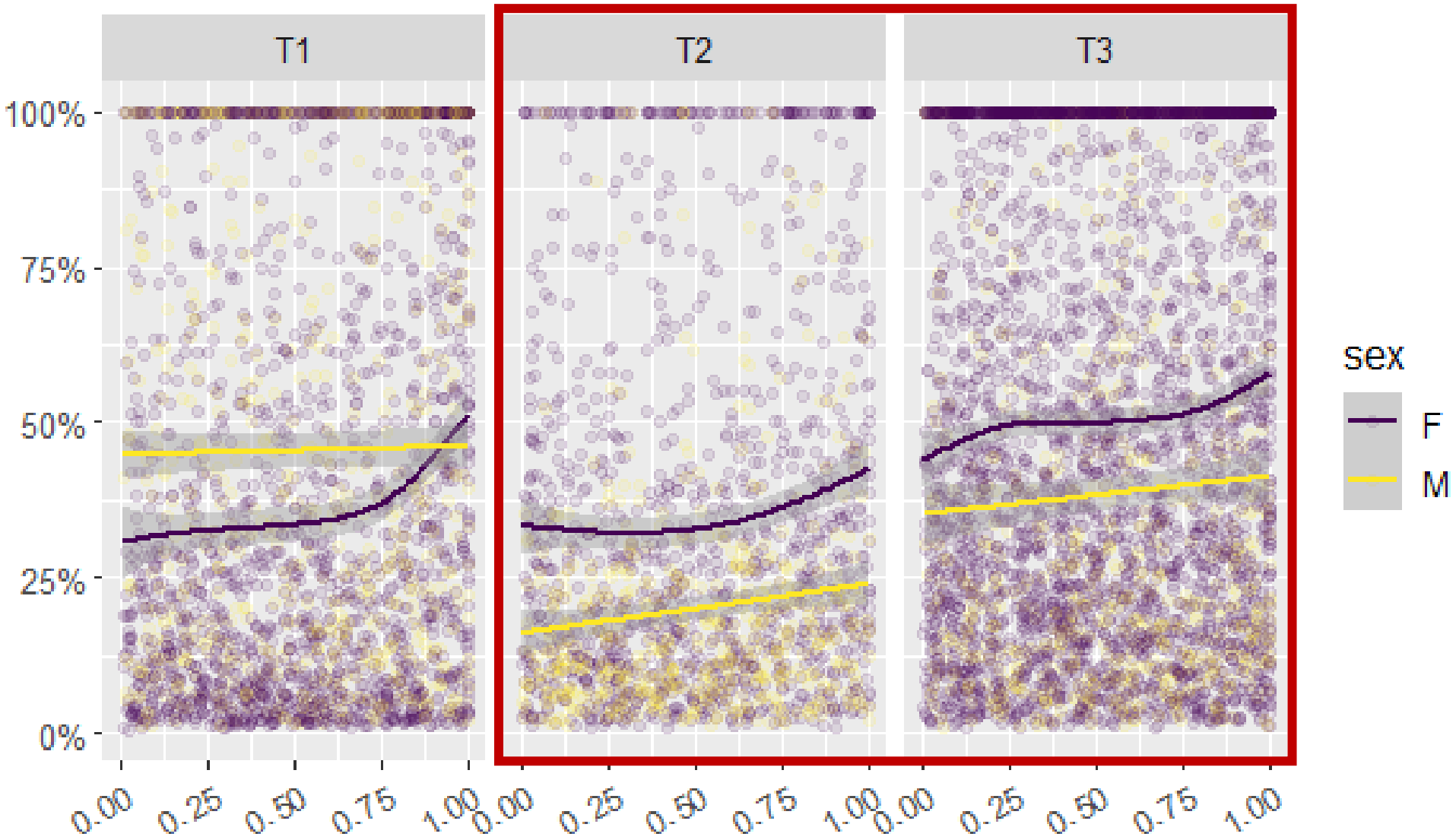
Tracing Language Variation and Change across the Lifespan

Creakiness by turn length over time



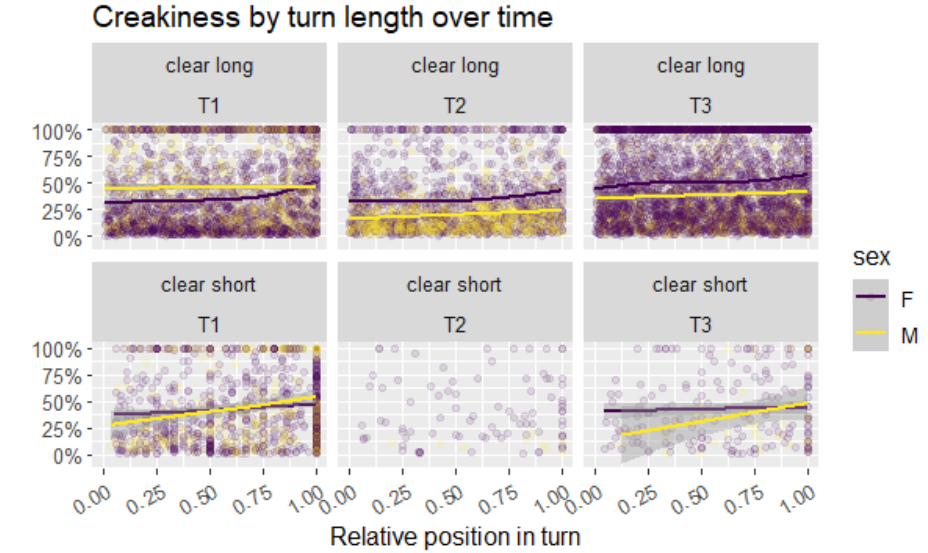
Tracing Language Variation and Change across the Lifespan

Creakiness for clear long turns



Tracing Language Variation and Change across the Lifespan

Results summary



- **Overall f0:**
  - Decreases with age
  - Women's f0 > men's f0
- **Turn-final creak:**
  - Short turns: creak used by men turn-finally, women throughout (trend for more creak turn-finally)
  - Long turns:
    - Creak used by women turn-finally at T1, T2, T3
    - Creak used by men turn-finally at T2, T3
  - T1 (1971) != T2 (2013) and T3 (2019)
  - Different social and interactional affordances by sex

Tracing Language Variation and Change across the Lifespan

Conclusion and Discussion

- **Overall f0:**
  - ➢Physiology
  - ➢Individual grammar
- **Turn-final falling intonation & creak:**
  - Related to interactional social performance (1970s vs. 2013/19)
  - Sex difference
  - ➢Community grammar
- **Changing social meaning of the interview & changing interview methods**

Tracing Language Variation and Change across the Lifespan

Our contributions

- Analysis of **turn-final creak in a panel sample** (1971 – 2013 – 2019)
  - Use of creak relates to:
  - Turn-final position (sex difference!)
  - Social context and performance (sex difference!)
- Speaker- and time-point specific definition of creak
- Use of **interactional resources over the life-time**
- Accounting for **changes in interview methods and social context**

Tracing Language Variation and Change across the Lifespan

Thank you!

DFG Deutsche Forschungsgemeinschaft

UNIVERSITÄT DUISBURG ESSEN

European Commission
Marie Skłodowska-Curie Actions

Newcastle University

Special thanks to Katherine Dallaston & Philip Harrison for their gracious help with REAPER and to our panel speakers for sharing their stories and voices!

Tracing Language Variation and Change across the Lifespan

The LaVaLi turns and creak team

Prof. Dr. Isabelle Buchstaller

Dr. Mirjam Eiswirth

Dr. James Grama

Student Assistants:

Carina Ahrens, Anna Lea Bauernfeind, Paul Enninger,
Anne-Marie Mölders, **Marie Philipp**, Hannah Sawall, Deborah Veiter

Thank you for your attention!

Any

Questions?