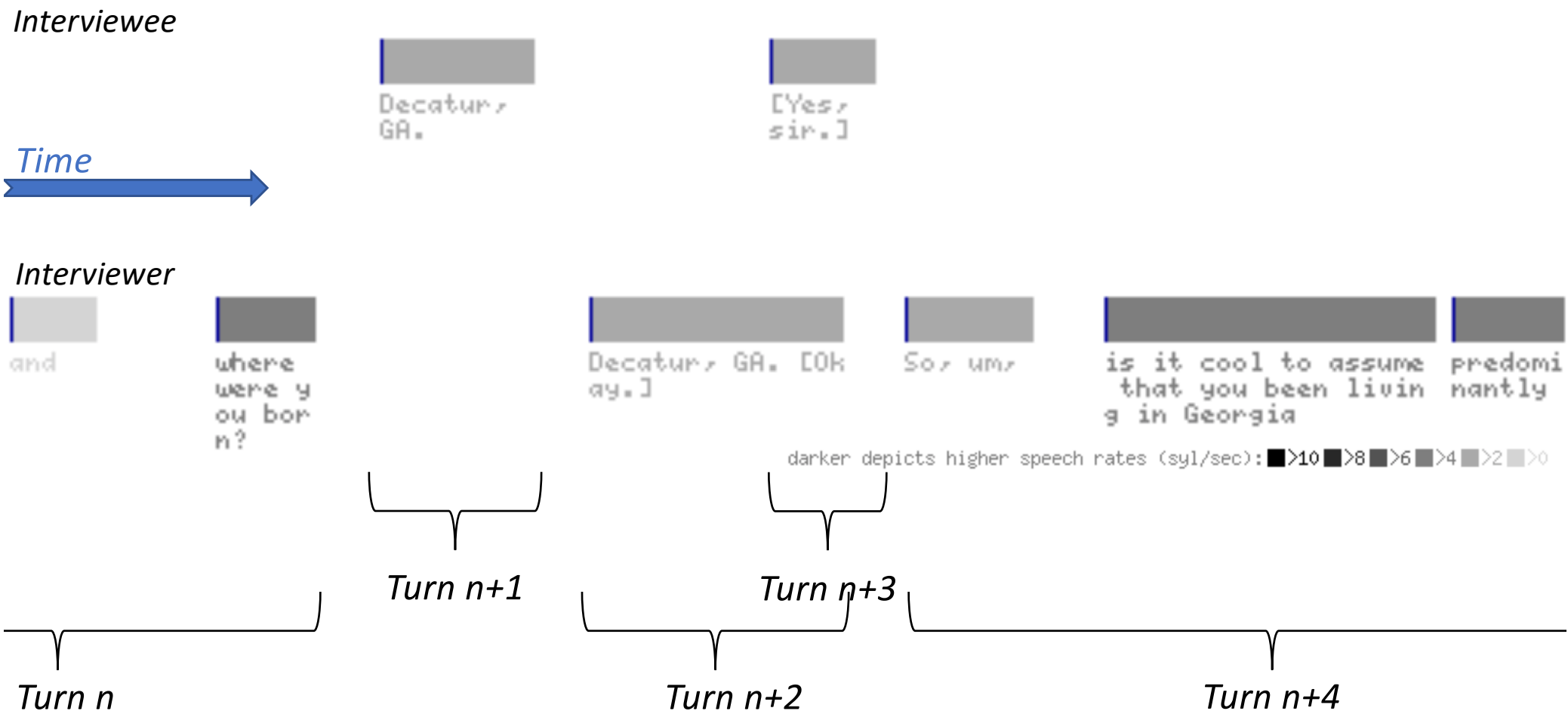# Interturn pausing, overlaps, and the co-construction of linguistic variation

Tyler Kendall

University of Oregon
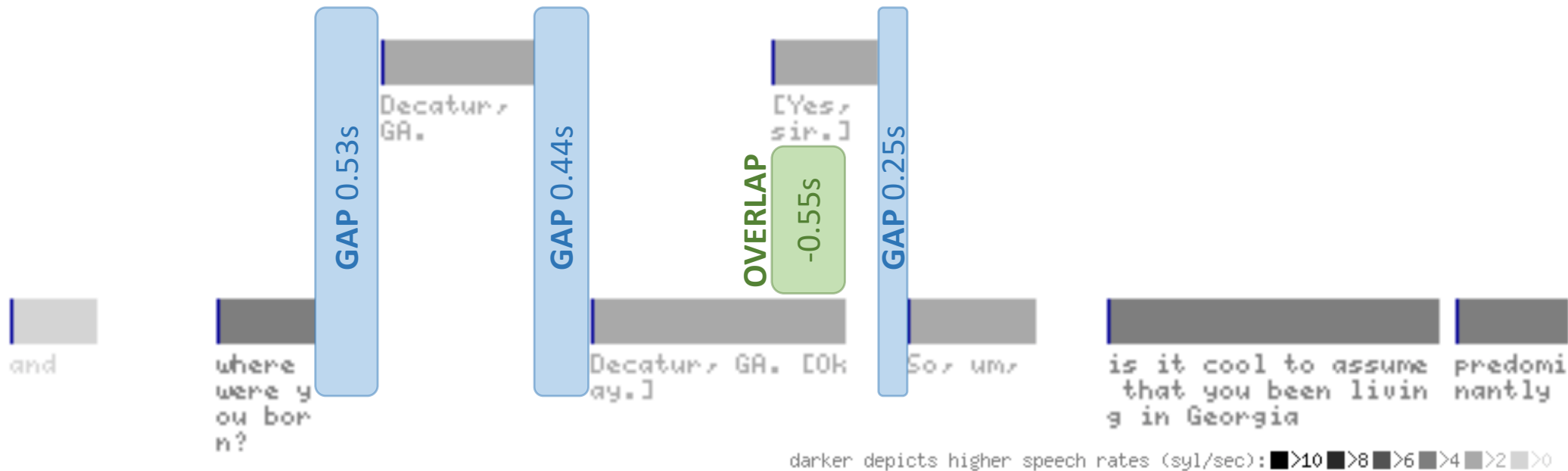
NWAV 50 | 15 October 2022

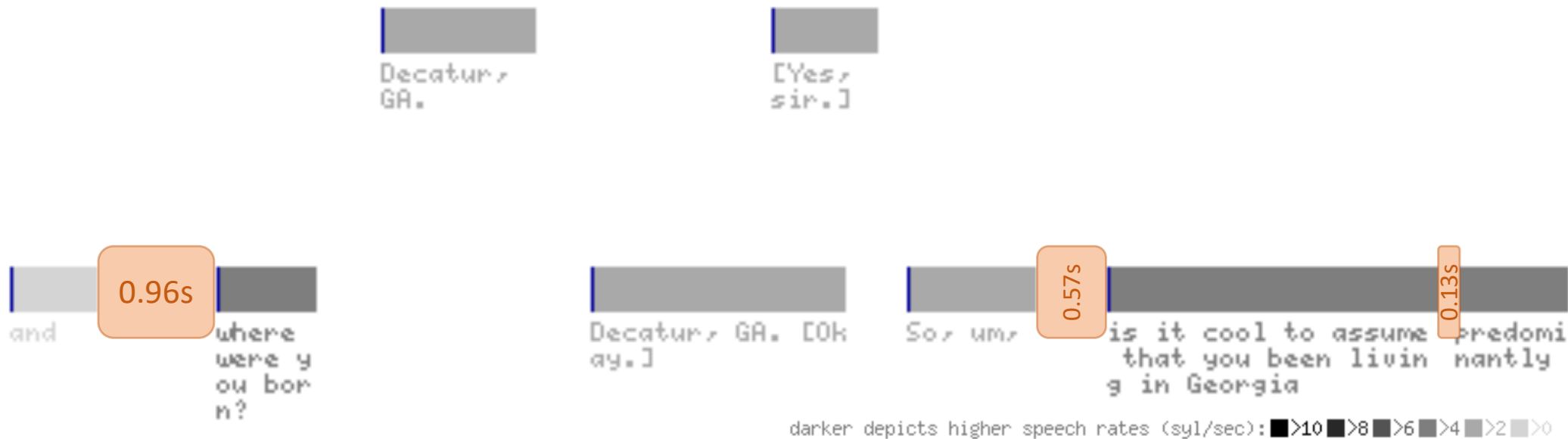# Between-speaker intervals

Interviewee

Decatur, GA.

[Yes, sir.]

Time

Interviewer

and

where were you born?

Decatur, GA. [Okay.]

So, um,

is it cool to assume that you been living in Georgia

predominantly

darker depicts higher speech rates (syl/sec): ■>10 ■>8 ■>6 ■>4 ■>2 ■>0

Turn n+1

Turn n+3

Turn n

Turn n+2

Turn n+4

Between-speaker intervals

darker depicts higher speech rates (syl/sec): ■>10 ■>8 ■>6 ■>4 ■>2 ■>0

- Between-speaker intervals (**BSIs**):
  - **Gaps** = positive durations | **Overlaps** = negative durations
  - = Timing of turn-taking
   - BSI terminology from Heldner & Edlund (2010)

3

Between-speaker intervals

darker depicts higher speech rates (syl/sec): ■>10 ■>8 ■>6 ■>4 ■>2 ■>0

- Not examining **within-speaker silent pauses** here
  - cf. Kendall (forthcoming) for some analyses of within-speaker pauses (and speech rates) in CORAAL
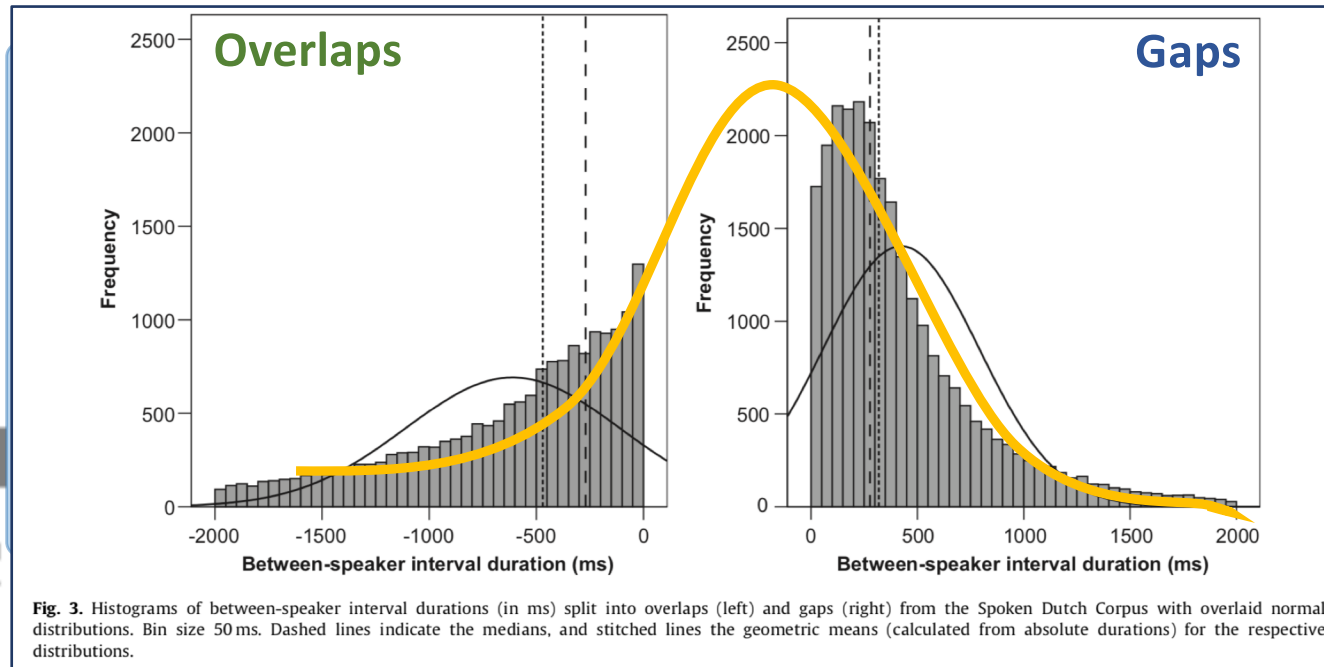   - Also, Kendall (2013), Pratt (2021) for studies of silent pauses

Between-speaker intervals

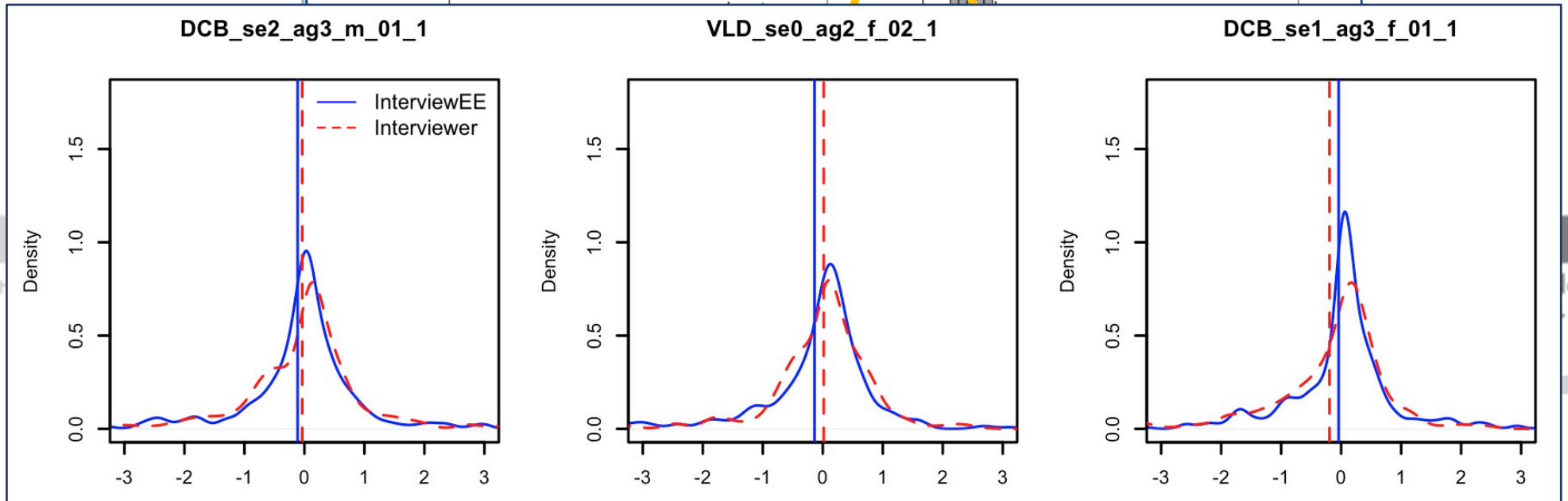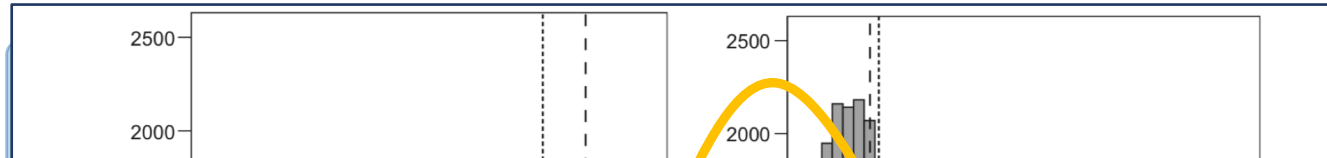darker depicts higher speech rates (syl/sec): ■>10 ■>8 ■>6 ■>4 ■>2 ■>0
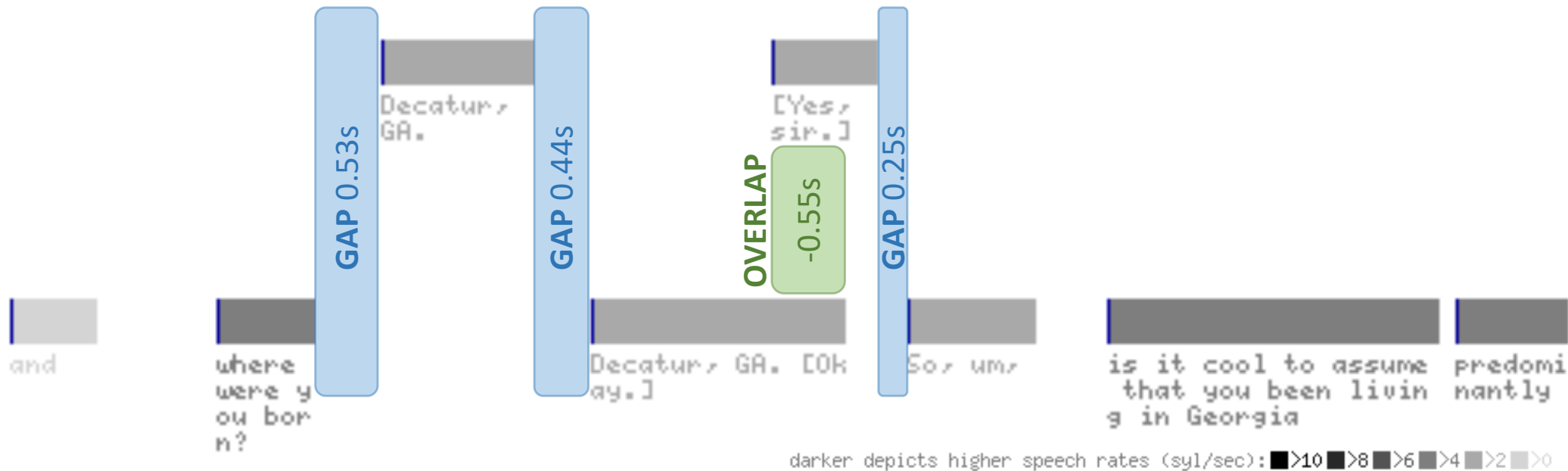
- What internal and external factors account for the *durations* of between-speaker intervals (BSIs)?
- What can these tell us about sociolinguistic variation?

Between-speaker intervals

Fig. 3. Histograms of between-speaker interval durations (in ms) split into overlaps (left) and gaps (right) from the Spoken Dutch Corpus with overlaid normal distributions. Bin size 50 ms. Dashed lines indicate the medians, and stitched lines the geometric means (calculated from absolute durations) for the respective distributions.

- Following Heldner & Edlund (2010) BSIs can be modeled as a single normal distribution
  - I.e. not analyzing *gaps* and *overlaps* as different distributions/phenomena

6

Between-speaker intervals

a single normal distribution

- I.e. not analyzing *gaps* and *overlaps* as different distributions/phenomena

Between-speaker intervals

- Turn boundaries have long been the domain of conversation analysis (since Sacks et al. 1974), but have seen little interest by variationist sociolinguists

- Hard to consider from a variable perspective?
  - To whom to attribute the space between talkers' talk?
    = *The speaker who breaks the silence*
  - Different from other variables, including (within-speaker) pauses and prosodic features
- *Ultimately, a part of the structure of conversation, co-constructed by the interlocutors*

Less studied in sociolinguistics… except…

- Mendoza-Denton (1995), study of Anita Hill-Clarence Thomas hearings:
    - Examined gap length as a reflection of "important power dimensions within a discourse; it may be used in different ways to legitimize, acknowledge, support, or cast doubt on the statements of the previous speaker…" (p. 54).
    - Showed that "the senators employed a number of silencing strategies that served to validate Thomas's statements and weaken Hill's…" (p. 55)

- Thus: Variability in BSIs occurs, speakers can employ this variability, and it influences the interpretation of discourse

9

What factors account for the durations of BSIs?

- Early conversation analysis work (e.g. Sacks et al. 1974) claimed that "no-gap—no-overlap" cases were the unmarked turn transition.
  - Lots of work since has continued to look at timing of turn transitions
    - E.g. Task difficulty and lack of familiarity increase gap lengths (Bull & Aylett 1998)

- Some recent work has taken corpus-based approaches of relevance to sociolinguistics (e.g. ten Bosch et al. 2005)
  - Heldner & Edlund (2010) investigated three languages (English, Swedish, & Dutch) and different kinds of conversational speech tasks.
    - "no-gap—no-overlap" is rare.

Data from CORAAL

- Corpus of Regional African American Language
  - 6 of the 7 released components

Component	Location	~Year	Time (Hours)	Words
~~DCA~~	~~Washington, DC~~	~~1968~~	~~34.0~~	~~334K~~
DCB	Washington, DC	2016	46.0	515K
PRV	Princeville, NC	2004	14.0	156K
ROC	Rochester, NY	2018	13.2	139K
ATL	Atlanta, GA	2018	8.6	94K
VLD	Valdosta, GA	2018	11.5	112K
LES	Manhattan, NY	2009	8.4	100K

- After some trimming, analyzing **23,587 BSIs**
  - Interviews with two interlocutors only (N = 137 recordings)
  - DV = *duration* of *interviewees*' BSIs

- Code to extract and explore the data available:
  http://lingtools.uoregon.edu/coraal/explorer/examples.php

What factors account for the durations of BSIs in CORAAL?

- Presenting, briefly, a few analyses

  - Highlighting the strong correlation between speakers' BSIs in interaction
    - CORAAL patterns are congruent with other findings (e.g. ten Bosch et al. 2005, Edlund et al. 2009, Heldner & Edlund 2010)

  - Closer looks at the correlation within interactions
    - … Is this accommodation, convergence, synchrony?

  - Then, too briefly, a mixed-effect model testing a wide-range of social and internal/discourse factors

BSIs are highly correlated btw speakers

r = 0.594; p < 0.000001

Interviewer Mean BSI Duration (sec)

InterviewEE Mean BSI Duration (sec)
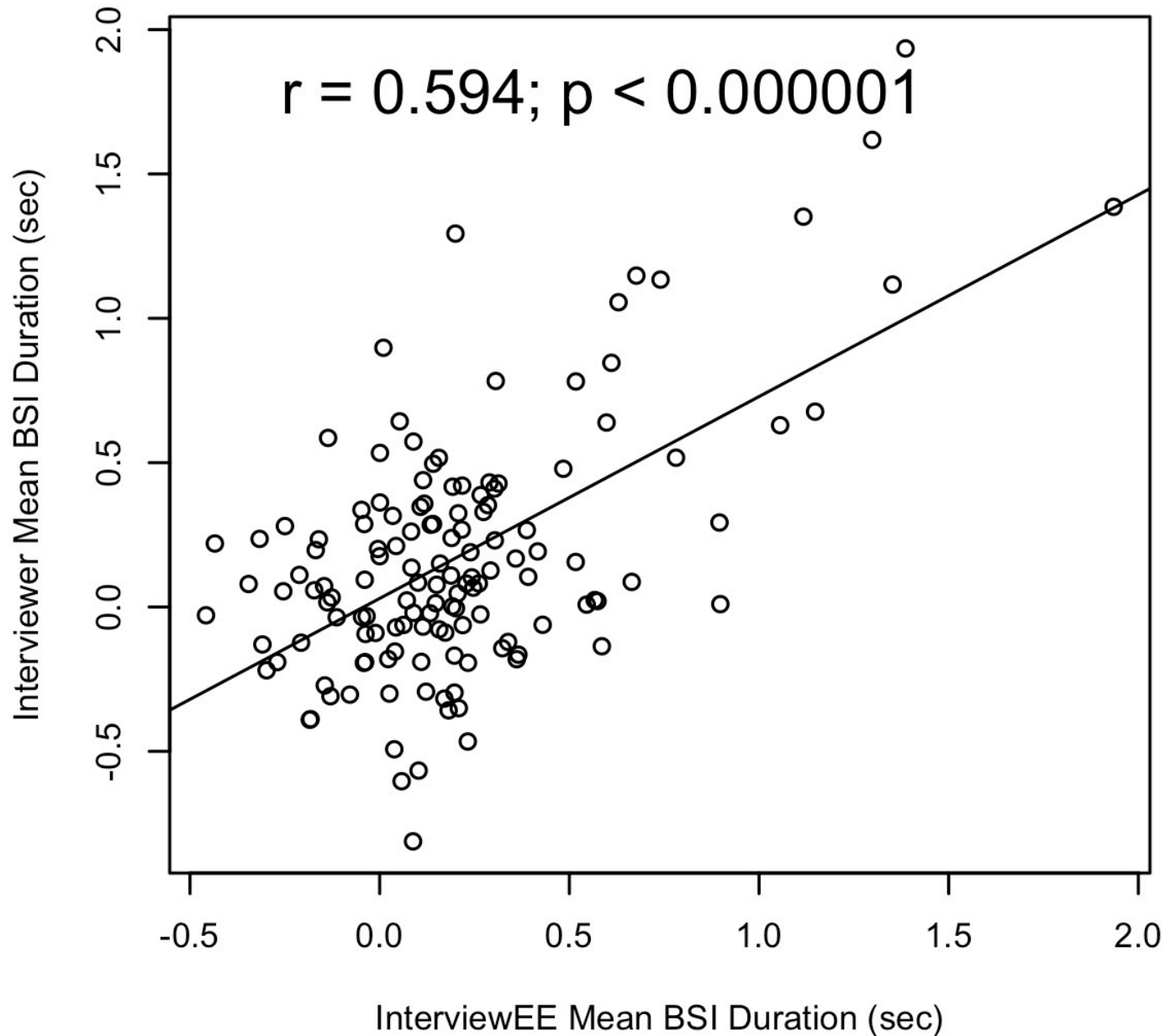
Why are these highly correlated?

- What does it mean, sociolinguistically, that speakers' BSIs are highly correlated?

- **Accommodation ≈ Convergence** = Increasing similarity over time.

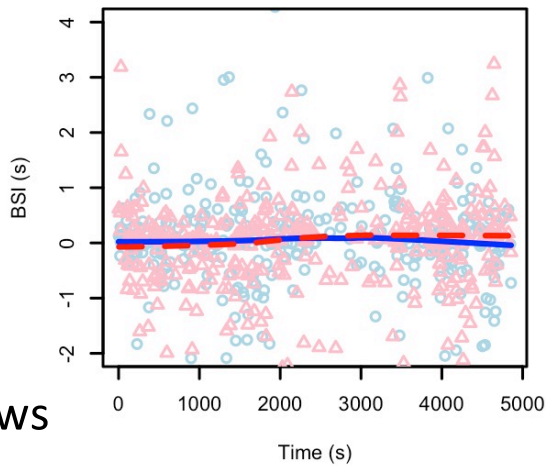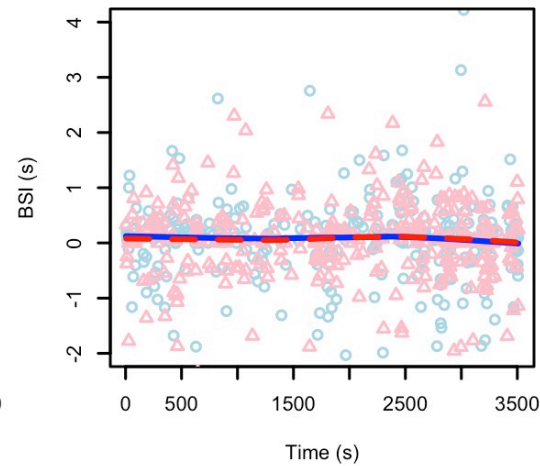- **Co-construction ≈ Synchrony** = Similarity in relative values, coordinated shifting.
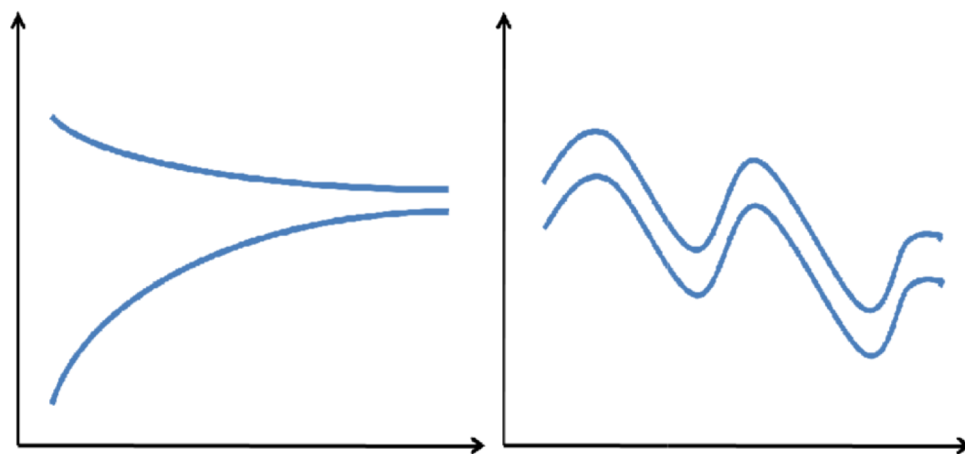
Figure 1: *Schematic illustrations of convergence (left pane) and synchrony (right pane) as they are used in this paper.*

From Edlund et al. (2009)

Convergence?

6 sample interviews from the dataset

Individual BSIs plotted by Time, with LOWESS lines

- Little evidence of convergence within interviews

Synchrony

DCB_se2_ag3_m_01_1 **VLD_se0_ag2_f_02_1** **DCB_se1_ag3_f_01_1**

r = -0.475; p = 0   r = -0.016; p = 0.783708   r = -0.42; p = 0

Same sample
interviews as above
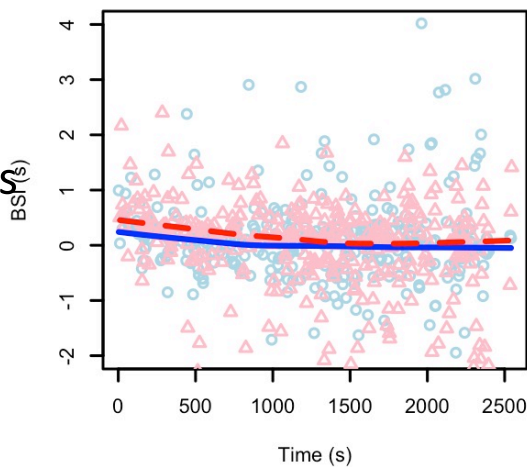
ATL_se0_ag2_m_02_1 **PRV_se0_ag3_m_02_1** **DCB_se2_ag4_f_04_1**
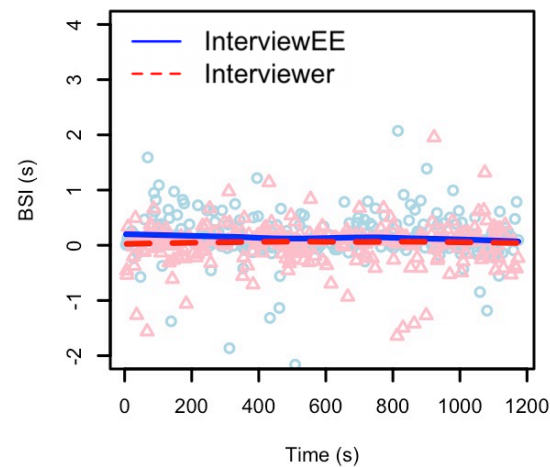
Individual BSIs
plotted by Time,
smoothed with a
20-point moving
window (following
Edlund et al. 2009)

InterviewEE
Interviewer

r = 0.154; p = 0.005241   r = -0.606; p = 0   r = 0.1; p = 0.104691

Pearson correlation
tests for each
recording

- 76% have significant correlation (p < 0.05)
  - 60% have sig. correlation at p < 0.001
- 29% have sig. positive correlation (p < 0.05)
- 48% have sig. negative correlation (p < 0.05)
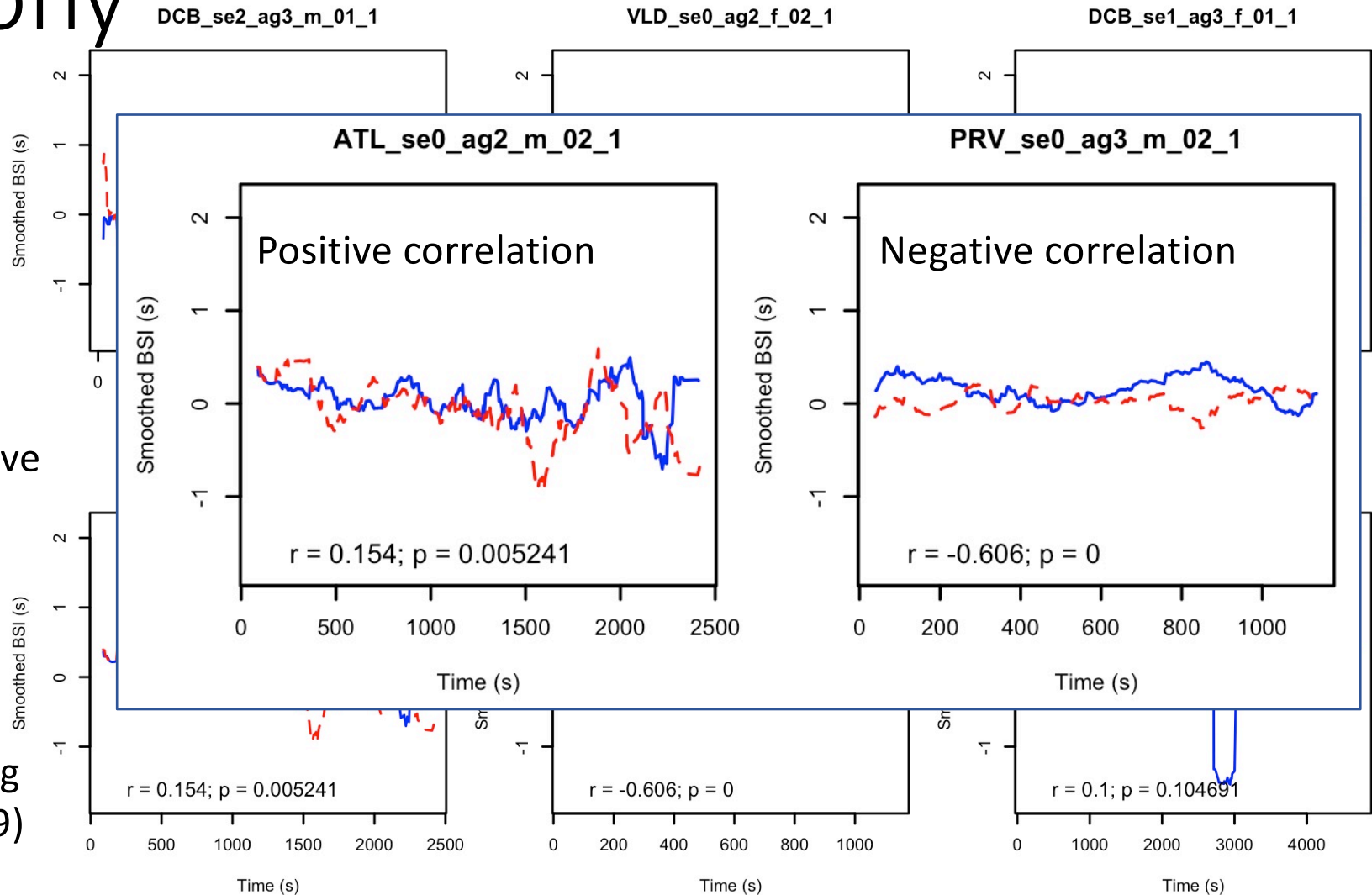
16

Synchrony

Same sample interviews as above

Individual BSIs plotted by Time, smoothed with a 20-point moving window (following Edlund et al. 2009)

Pearson correlation tests for each recording

- 76% have significant correlation ($p < 0.05$)
  - 60% have sig. correlation at $p < 0.001$
- 29% have sig. positive correlation ($p < 0.05$)
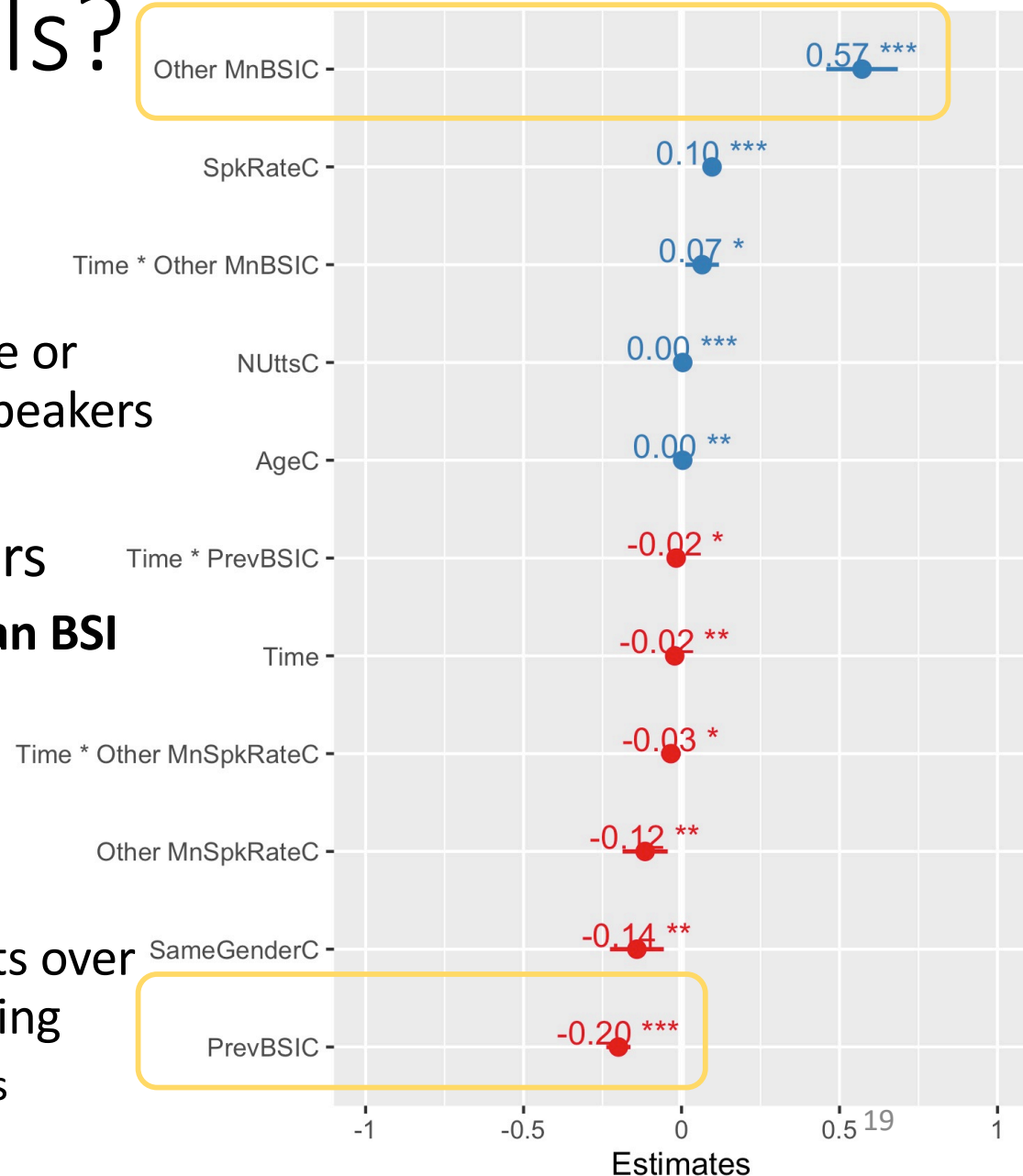- 48% have sig. negative correlation ($p < 0.05$)

What factors account for the durations of BSIs in CORAAL?

- Mixed-effect linear regression of CORAAL data
  - Testing a wide-range of factors
    - External factors
      - CORAAL provides lots of social metadata (age, gender, education level, relationship btw interviewer and interviewee…)
    - Internal/Discourse factors
      - Coded and tested a number of predictors, esp. those that might help to get at accommodation and convergence
        - The other speaker's mean BSI & mean speaking rate
        - Speaking rate & length of upcoming turn
        - Previous turn's BSI
        - Time in the interaction

  - Factors were centered on 0; Time was scaled and centered
    - So e.g. Time is a proportional measure within each recording centered around 0
  - Maximal random effects structure that would converge

What factors account for the durations of BSIs?

- Significant predictors
  - External factors
    - **Gender difference** (same or different) btw the two speakers
    - Speaker **Age**
  - Internal/Discourse factors
    - The other speaker's **mean BSI** & **mean speaking rate**
    - **Speaking rate** & **length of turn**
    - **Previous turn's BSI**
    - Weak indications of shifts over the course of the recording
      - Time & its interactions

Model estimates for BSI Durations

Predictor	Estimate
Other MnBSIC	0.57 ***
SpkRateC	0.10 ***
Time * Other MnBSIC	0.07 *
NUttsC	0.00 ***
AgeC	0.00 **
Time * PrevBSIC	-0.02 *
Time	-0.02 **
Time * Other MnSpkRateC	-0.03 *
Other MnSpkRateC	-0.12 **
SameGenderC	-0.14 **
PrevBSIC	-0.20 ***

Estimates

19

What is going on within the interviews?

- I'm not looking within interviews at all today (in terms of what people are actually talking about)

- Suggestion: Patterns of synchrony in BSIs derive from **stance** & **stancetaking**

ATL_se0_ag2_m_02_1

r = 0.154; p = 0.005241

PRV_se0_ag3_m_02_1

InterviewEE
Interviewer

r = -0.606; p = 0
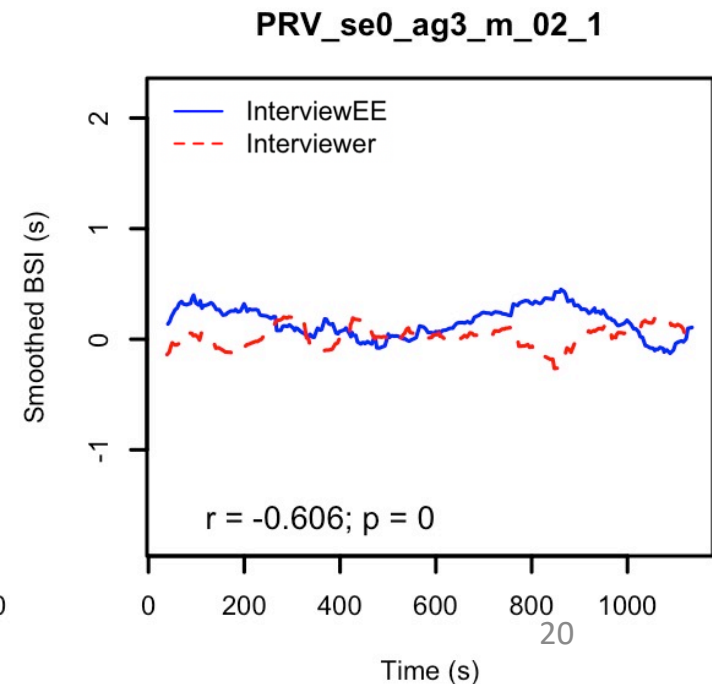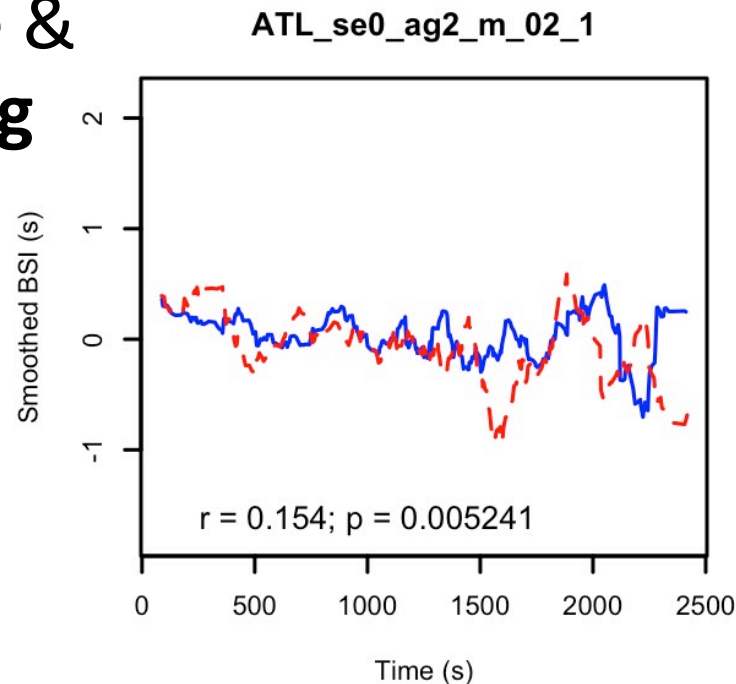
What can account for variability in the duration of BSIs? = **Stancetaking**

- Kiesling (2009, 2022): Style = "intraspeaker variation" (Labov 1972 & Bell 1984) & "personal style" (Eckert 2002)

  ➔ Stance

  - "Stancetaking is the main constitutive social activity that speakers engage in when both creating a style and 'style-shifting'." (p. 175)

- BSIs are a part/provide evidence of the structure of the "stance triangle" (Kiesling 2022, Du Bois 2007)
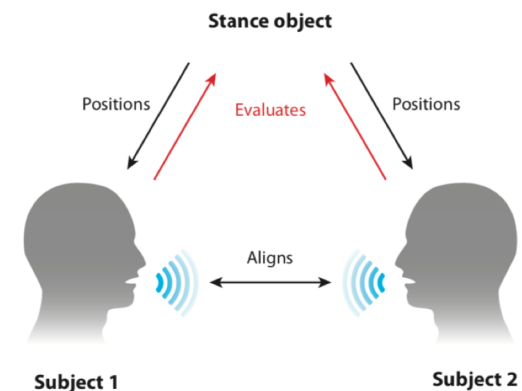

Figure 1
The stance triangle. Figure adapted from Du Bois (2007, p. 163); available at **https://bit.ly/3qKgcWn** (CC BY-SA 4.0).

From Kiesling 2022

Looking ahead: Speech timing features as predictors

- Proposal: Measures of BSIs could be used to identify changes in speech activities or changes in speakers' stancetakings
  - I.e. to test hypotheses about how stances relate to variable realizations

- Kendall (2013, forthcoming): Proposed a measure of hesitancy ("Henderson Graph slopes") that can be used to test hypotheses about variation, style-shifting, etc.
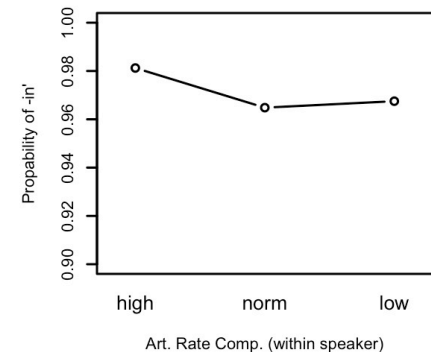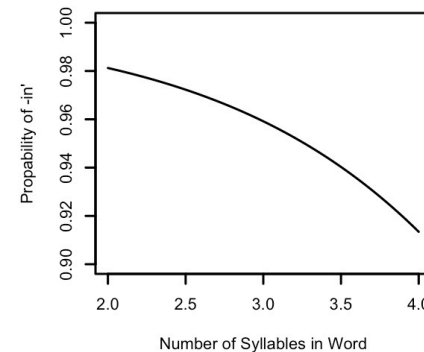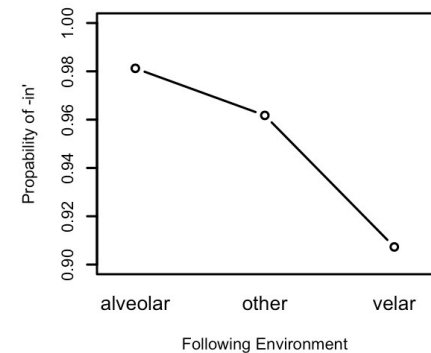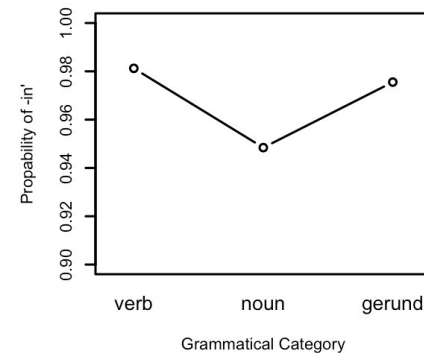
Henderson Graph example for CORAAL
DCB_se1_ag3_f_03
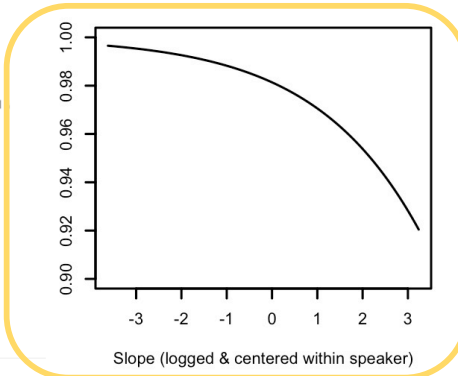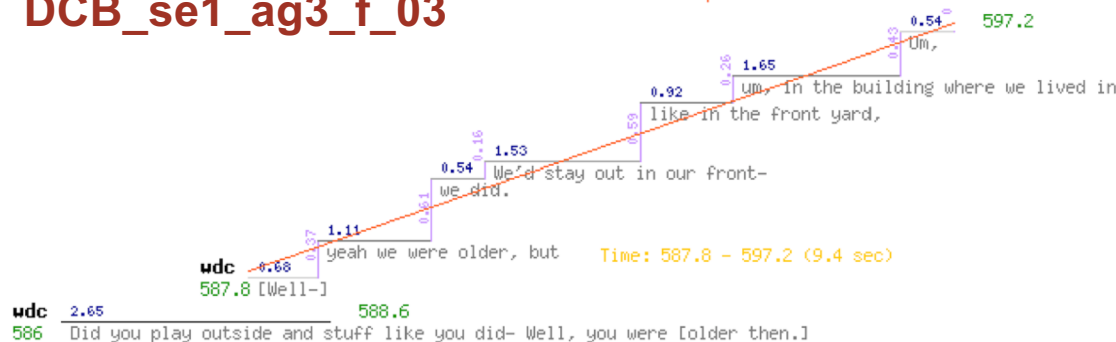
Kendall (2013), Fig 8.4

Henderson Graph slopes sig. predict (ING) realizations

22

Caveat

- BSIs can be co-constructed
  - I.e. in conversational talk, they are jointly produced

- But, back to Mendoza-Denton's (1995) analysis of the Anita Hill-Clarence Thomas hearings
  - Senators conducting the hearings controlled the timing of the discourse
  - Anita Hill was *not* a co-creator of the timing
  - BSIs can be both coordinated but also controlling, depends on the power dynamic in the discourse
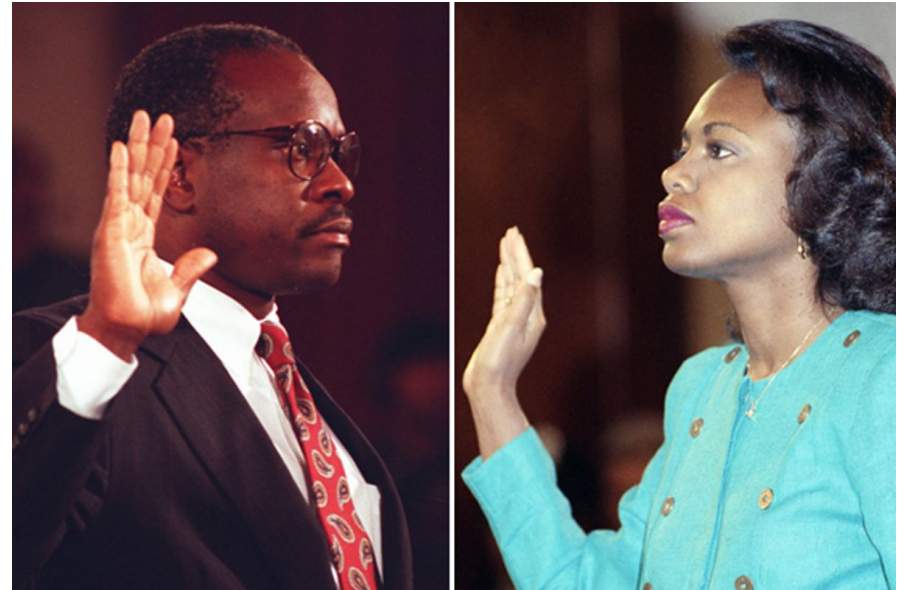
Closing

- *Shown*: BSIs are highly patterned within discourse and show (both positive and negative) synchrony

- *Proposed*: BSIs can help to provide a window into stancetaking and may be helpful for studying style shifts within discourse
  - Similar to Henderson Graphs (Kendall 2013) but capturing something related to turn-management

- What stances and speech activities correspond with positive and negative synchrony in BSIs?
- To what extent are patterns of BSIs relevant to other prosodic (and non-prosodic) variation?
  - Empirically, they are much more patterned than silent pauses (Edlund et al. 2009, Kendall 2013, forthcoming)
- What other features or measures shed light into the structure of speech activities and stancetaking?

Open Questions

24

Thank you!

- I'd love to receive questions, comments etc:
  - tsk@uoregon.edu

- Code & data & slides:
  - http://lingtools.uoregon.edu/coraal/explorer/examples.php

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