

# P5 #1

LSA 2015 Annual Meeting  
Portland, OR, Jan. 8-11

# The prosody of negative 'yeah'

Valerie Freeman, Richard Wright, Gina-Anne Levow

UNIVERSITY of WASHINGTON

depts.washington.edu/phonlab/projects.htm

{ valerief, rawright, levow } @ uw.edu

## Goal

Examine acoustic-prosodic patterns of negative 'yeah,' lexically positive words that express negative stance (attitudes, opinions [1-2])

## ATAROS Corpus

34 dyadic conversations

- Strangers, from Northwest
- Matched by age group
- Matched/crossed gender

5 collaborative tasks [3-5]

- Stance-dense
- 2 used in this analysis:
- **Inventory**: arrange items in a superstore
- **Budget**: cut items from a county budget

Transcription [7-9]

- Manually transcribed
- Force-aligned to audio

Annotation [4-6]

- Utterances marked for **stance strength** (none, weak, moderate, strong) and **polarity** (positive, negative, neutral)

Available online

[depts.washington.edu/phonlab/projects.htm](http://depts.washington.edu/phonlab/projects.htm)

## Sample

46 speakers, 8.7 hours,  
2870 'yeah's uttered:

- 68% occur in positive utterances (agree, affirm)
- 30% in neutral/non-stance (answer, backchannel)
- 2% in negative utterances

## Content Analysis

Negative 'yeah's examined for stance function (N=46 from 24 speakers)

Common categories:

**"Yeah but"** (N=12)

followed by explanation against preceding stance

**"Reluctance"** (N=13)

hesitation to accept or agree with preceding stance

**"Tough problem"** (N=12)

expresses shared difficulty (e.g., "shoot, what a tough problem")

**"That's bad"** (N=6)

states agreement with a negative assessment without the empathy implied in "tough problem" (e.g., "you're right, that's bad")

## Measures

- Pitch & Intensity taken at every decile of word duration via Praat script [7]
- Normalized via speaker-internal z-transform

## Plots

- Smoothing-Spline ANOVA
- Shading shows 95% confidence intervals around means (splines)

## Results

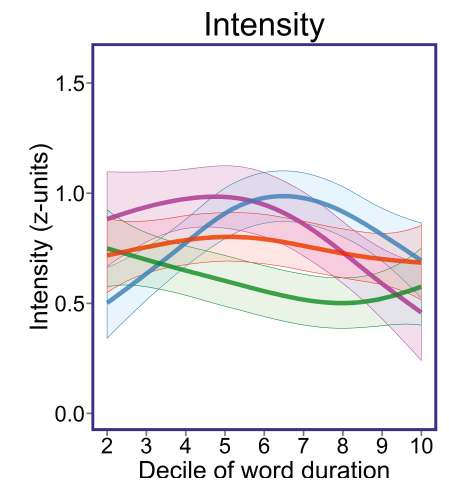
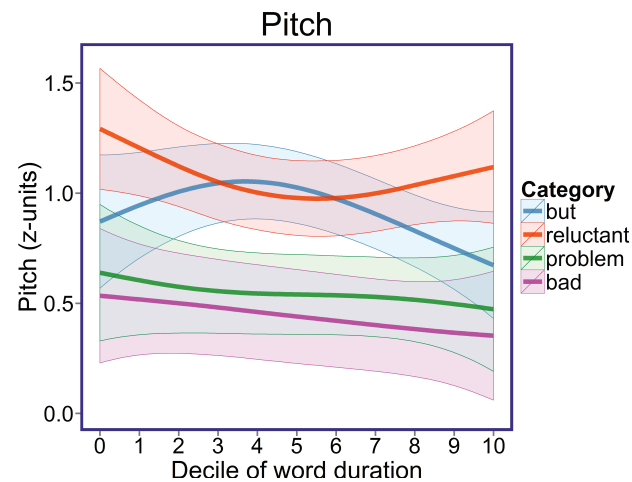
Negative 'yeah's (N=43)

- Cross-cutting pitch and intensity patterns distinguish the four categories identified via content analysis

cross-contours	flatter intensity	domed intensity
flat pitch	problem (N=12)	bad (N=6)
contour pitch	reluctant (N=13)	but (N=12)

All 'yeah's (N=2870)

- Pitch and intensity increase with stance strength (stronger stance = louder, higher pitch)
- Pitch and intensity are higher for negative 'yeah's than positive/neutral

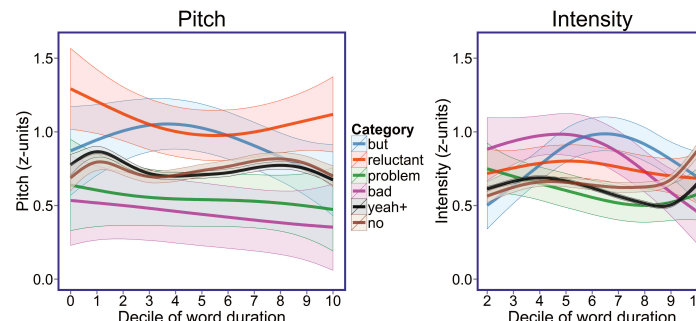


\* First two measurement points removed due to tracking errors and missing data

## Future Work

Classify, compare other polarized lexical items: non-negative 'yeah's, positives (yes, uh-huh), negatives (no, nah) [10]

Intermediate contours of positive/neutral 'yeah's (black line, N=2824) & 'no's (brown, N=246) suggest subcategories



## References

- [1] D. Biber, S. Johansson, G. Leech, S. Conrad, and E. Finegan, Longman grammar of spoken and written English. Longman, 1999.
- [2] P. Haddington, "Stance taking in news interviews," SKY J. of Linguistics, 17:101-142, 2004.
- [3] V. Freeman, G.-A. Levow, and R. Wright, "Phonetic marking of stance in a collaborative-task spontaneous-speech corpus," 167th ASA Meeting, 2014.
- [4] V. Freeman, J. Chan, G.-A. Levow, R. Wright, M. Ostendorf, and V. Zayats, "Manipulating stance and involvement using collaborative tasks: An exploratory comparison," Interspeech, 2014.
- [5] V. Freeman, J. Chan, G.-A. Levow, R. Wright, M. Ostendorf, V. Zayats, Y. Luan, H. Morrison, L. Fox, M. Antoniak, and P. Parsons, "ATAROS Technical Report 1: Corpus collection and initial task validation," U. Washington Linguistic Phonetics Lab, 2014.
- [6] Levow, G.-A., Freeman, V., Hrynkevich, A., Ostendorf, M., Wright, R., Chan, J., & Tran, T. "Recognition of stance strength and polarity in spontaneous speech," SLT 2014.
- [7] P. Boersma and D. Weenink, "Praat: doing phonetics by computer, version 5.3," 2013.
- [8] N. Morgan, D. Baron, J. Edwards, D. Ellis, D. Gelbart, A. Janin, T. Pfau, E. Shriberg, and A. Stolcke, "The meeting project at ICSI," Human Language Technologies Conference, 2001.
- [9] J. Yuan and M. Liberman, "Speaker identification on the SCOTUS corpus," Acoustics, 2008.
- [10] V. Freeman, "Hyperarticulation as a signal of stance," J. Phonetics, 45:1-11, 2014.