The Intonational Phonology of Yes-No Questions in African American Vernacular English

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How would you ask this question:

“Do you hear the sleigh bells ringing?”
Do you hear the sleigh bells ringing?

Pitch Contours on the word “ringing”

TIMIT Acoustic-Phonetic Continuous Speech Corpus
Do you hear the sleigh bells **ringing**?

Pitch Contours on the word “ringing”
Sources of Intonational Variation:

• Token Level:
  Semantic intent
  Emotional state
  Syntactic constraints

• Speaker/Societal Level:
  Individual differences
  Language differences
  Socio-linguistic factors
Dialect Variation

Percent of Yes-No Questions with Rising Intonation in Seven Dialects of the British Isles

Grabe (2004)
African American Vernacular English

• Tarone (1973)
  – falling final pitch in yes-no questions more common in “formal, threatening situations”
  – level and rising intonation in informal, familiar situations

• Jun and Foreman (1996)
  – more variable boundary tones in AAVE than SE during role-playing

• Green (2002)
  – flat final syllable (SW Louisiana teens and adults)
Current Study Objectives:

- Describe Quantitatively
  - How are AAVE speakers marking their yes-no questions (in cases with a flat final syllable)?
  - Flat syllable across the country?
  - Confirm in spontaneous speech

- Assess impact of:
  - syntactic inversion
  - semantic constraints
Methods

• Corpus analysis:
  – CALLFRIEND American English (Southern and Non-Southern Dialect)
  – East Palo Alto Sociolinguistic Interview with Foxy Boston
CALLFRIEND

- 30 min. phone conversations
- “Southern” or “non-southern” dialect based on vowel phonology
- All AAVE speakers = “southern dialect”, regardless of geography
- No ethnic data on individual speakers -- How do I know this is AAVE?
AAVE Identification

• First: picked speakers from northern cities in the Southern Dialect corpus
• Next: verified speakers were using other AAVE features:
  – zero copula
  – doesn’t -> don’t
  – consonant cluster simplification (e.g. talked -> talk, slipped -> slip)
  – other sound changes (e.g. ð. -> d)
• Additional evidence:
  – Lexical items (brother, sister)
  – Use of falsetto by one of the male speakers
Data Collection: Speakers

1. Speaker 1
   - Corpus: Callfriend
   - Gender: Male (4)
   - Place: Pennsylvania (4)
   - Variety: AAVE (2)

2. Speaker 2
   - Corpus: Callfriend
   - Gender: Female (8)
   - Place: New York (2)
   - Variety: AAVE-influenced HE (1)

3. Speaker 3
   - Corpus: Callfriend
   - Gender: Female (8)
   - Place: Michigan (2)
   - Variety: AAVE (1)

4. Speaker 4
   - Corpus: Callfriend
   - Gender: Male (4)
   - Place: East Palo Alto (4)
   - Variety: AAVE (4)

5. Speaker 5
   - Corpus: Socioling
   - Gender: Female (8)
   - Place: New York (2)
   - Variety: SAE (1)

6. Speaker 6
   - Corpus: Socioling
   - Gender: Male (4)
   - Place: Pennsylvania (4)
   - Variety: SAE (2)

7. Speaker 7
   - Corpus: Interview
   - Gender: Female (8)
   - Place: Michigan (2)
   - Variety: SAE (1)

8. Speaker 8
   - Corpus: Interview
   - Gender: Female (8)
   - Place: Pennsylvania (4)
   - Variety: AAVE (1)

9. Speaker 9
   - Corpus: Interview
   - Gender: Male (4)
   - Place: East Palo Alto (4)
   - Variety: AAVE (4)

10. Speaker 10
    - Corpus: Interview
    - Gender: Male (4)
    - Place: Pennsylvania (4)
    - Variety: SAE (2)

11. Speaker 11
    - Corpus: Interview
    - Gender: Female (8)
    - Place: New York (2)
    - Variety: SAE (1)

12. Speaker 12
    - Corpus: Interview
    - Gender: Male (4)
    - Place: Michigan (2)
    - Variety: AAVE (1)
Data Collection: Tokens

- Questions identified and screened for pragmatic intent
  - Information-Seeking (IS)
  - Information-Confirming (IC)

- Tokens with bad sound quality dropped

End Result: 125 yes-no questions
Quantitative Metrics

Example Question from CALLFRIEND:

Getting any publications?

Whole Question

Final Word

Final Syllable

Final Stressed Syllable (FSS)

Syllable Before FSS

First Syllable of Final Word
Pitch slope from minimum to maximum

Pitch slope from start to end
Motivation for Features
Main Findings:

- Level and falling terminal pitch
  - in AAVE AND SE
  - higher rates in AAVE
  - prosodic impact
- Inversion correlates strongly with pitch slope of the final syllable for male AAVE speakers
- “Seeking” vs. “Confirming” Questions: AAVE Males and SE Females have different phonetic correlates
AAVE Contour Similarity Over Age, Distance, Gender

Foxy Boston, Female, Age 13, 1986, East Palo Alto

Was it fun?

CFM40PA, Male, Age 40, c.1996, Grew up in PA

Going to school?
Final Syllable Pitch Slope

- AAVE speakers more likely to have level or falling final syllable pitch slope

The Pennsylvania Males:

\[
p = .038 \\
p = .035
\]
Prosodic Influence

• Dialectal difference greater when last two syllables “unstressed stressed”

The Pennsylvania Males

n = 40, p = .035  

n = 15, p = .039
Question Pitch Slope

- Pitch slope over the question as a whole is surprisingly similar

The Pennsylvania Males

![Box plots showing pitch slope for AAVE and Non-AAVE males for minimum to maximum and start to end slopes.](image)
Question Rise by Different Means

19-year-old Female SE Speaker from NY

40-year-old Male AAVE Speaker from PA
Implications

• Liu and Xu (2007)
  – Yes-no questions diverge from declaratives at stressed syllable of first content word
• Could AAVE speakers be exaggerating this early rise?
Inversion
Auxiliary-Subject Inversion

- Inverted:
  - Is it a book?
  - Do you like pizza?

- Non-Inverted:
  - It’s a book?
  - You like pizza?
Inversion and Intonation

- Haan (2001) - Dutch
- Grabe (2004) - English in British Isles
Inversion and Pitch Slope

- Huge effect for AAVE males, slight effect for everyone else

\[ p < .01 \]
Tarone’s Claim Revisited

- Tarone (1973) claims AAVE speakers more likely to have falling terminal pitch in “formal and threatening situations”
- Tarone’s examples:
  - Are you the teacher?
  - Is the man here?
- Maybe her results reflect greater use of inversion in formal speech
Semantic Influence
Information Seeking vs. Confirming Questions

• Information seeking:
  A question to which you don’t know the answer:
  – Are your parents around?

• Confirming:
  – Foxy: Well- I don't know hardly about nothing go on cause I'm new there. I just started.
  – Interviewer: That's right. In September huh?
  – Foxy: Um mm, I started in October.
  – Interviewer: Oh in October. So you didn't start at the beginning of the year?
Semantic Influence

• Confirming Questions:
  – greater pitch range on the final syllable
  – higher maximum pitch on the final syllable

• Dialectal differences:
  – AAVE males raise minimum pitch on last syllable, pitch range increase not significant
  – SE females lower minimum pitch on last syllable, pitch range significantly larger
Final Syllable Pitch Range

Females

Males

$p = .618$  
$p = .015^*$

$p = .901$  
$p = .351$
Final Syllable Maximum Pitch

Females

Males

\[ p = 0.718 \quad p = 0.059 \]

\[ p = 0.010^{**} \quad p = 0.783 \]

Information Confirming

Information Seeking
Final Syllable Minimum Pitch

Females

Males

\[ p = .308 \quad p = .597 \]

\[ p = .005^{**} \quad p = .723 \]
Why this is interesting

- AAVE and SE speakers use different contours to express interrogativity

BUT the function:
- Confirming information -> exaggerate intonational cues to interrogativity
  remains the same

- From this, would expect in different language varieties with different contours, this correlation should hold.
- The question is -- how universal is this correlation or is it specific to languages similar to English?
Summary

• Intonation contours of yes-no questions variable in AAVE and SE speakers

• But some constraints:
  – Higher rate of flat and falling final pitch in AAVE
  – Male AAVE speakers show significant pitch contour correlation with changes in inversion
  – AAVE males and SE females both exaggerate interrogative markers of their language variety for confirming questions
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% Tokens with Final Syllable Min to Max
Pitch Slope >= 0

- AAVE
- SAE
- HE