

Hyperarticulation as a Signal of Stance

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Study Overview

- Analyzes a political talk show for evidence that speakers use hyperarticulation (exaggerated pronunciation) to signal their stances
- Proposes that this use of hyperarticulation overrides the discourse convention of reducing the pronunciation of given information

New vs. Given

- Cooperative Principle (Grice 1967):
 - speakers are expected to give true, concise, and relevant information
- Given-New Contract (Clark & Haviland 1977:4):
 - “the speaker ... agrees to convey information he thinks the listener already knows as **given** information and to convey information he thinks the listener doesn't yet know as **new** information.”

New

- First introduced into discourse or reintroduced after extended interruption
- *Hyperarticulated*:
 - Exaggerated pronunciation, less coarticulation
 - Slower rate, longer durations, heavier stress
 - Expanded vowel space, pitch range
- Increase comprehension, avoid confusion
- Signal something new

Given

- Already “on the counter” (Prince 1981), activated in speakers’ discourse models
- Reduced articulation (hypoarticulation):
 - No extra effort needed to avoid confusion
 - Faster rate, shorter durations
 - Contracted vowel space, pitch range
- *Novelty*: dimension of new vs. given
 - Label items for analysis as new or given info

Hyperarticulation

- Other uses:
 - Emphasis, contrast
 - Focus, topic marking
 - Clarification, error correction, avoiding confusion
 - Affective, emotional expression
- Possible use:
 - Signal speaker stance

Stance / Evaluation

- Attitudinal stance: subjective attitudes, judgments, evaluations
- Evaluation: “the expression of the [speaker’s]... attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about” (Hunston & Thompson 2000:5).
- *Evaluation*: dimension of stance-expression
 - Identify presence or absence of stance

Hypotheses

- H1: There is an effect for Novelty
 - New information will be hyperarticulated
- H2: There is an effect for Evaluation
 - Stance-expressing tokens will be hyperarticulated compared to neutral tokens
- H3: There is a Novelty-Evaluation interaction
 - Evaluation will have a greater effect overall
 - Individual variation also expected

Data Set

- Episode of *Tucker* randomly selected from corpus of political talk shows
- All 6 segments of conversation analyzed
- 5 male speakers from various dialect regions
- *Concepts* identified for analysis:
 - Content word/phrase with three or more repetitions (*tokens*) said by same speaker in one conversational segment
 - Plus references to the concept (e.g. pronouns, synonyms, truncations)

Example Concept

Concept: “the war in Iraq”

Tokens analyzed: repetitions of “war”

References

“the **war** in Iraq”

“the **war** in Iraq”

“the **war**”

“a **war**”

“this”

“this critical issue of Iraq”

“the **war**”

“it”

Content Analysis

- One point for each act regarding the concept that signals a stance
- Divide total points by number of tokens
- Code *concepts* with scores ≥ 2.00 as “stance,” those below as “control”
 - Cutoff determined by frequency distribution of all concepts from the episode
 - Distribution was nearly normal with mean at 1.92

Speaker Acts

- a. Speaker works to keep concept in play
 - Introduces, returns to topic, repeats when interrupted, changes topic: “Let’s talk about *this*”
 - Asks to be heard: “Look / Listen, Let me say this”
- b. Expresses overt opinion about concept
 - “I think / believe, The way I see it, It’s clear to me”
- c. Uses loaded descriptions, modifiers of concept
 - “Obviously, ridiculous, important, impressive”
 - “It turned my stomach”

Speaker Acts

- d. Establishes credibility to support opinion
 - Cites experts: “Polls show, Most Americans agree, If you look at the study, That’s a fact, We all know”
 - Presents self as expert / authority: “I was there”
- e. Attempts to persuade, gives recommendations
 - “Think of it this way, You have to agree”
 - “Hopefully; What they should do is”
- f. Agrees / disagrees with another speaker
 - “I agree / disagree, Not at all, Absolutely, Right”

Marking Novelty

- New:
 - First introduction to the discourse
 - Reintroduction after 5+ turns over 60+ seconds
- Given:
 - all other tokens
- Combination of labels for each token:
 - stance or control + new or given

Data Set

Type	Concepts	Tokens			Vowels		
		Given	New	Total	Given	New	Total
Control	33	82	27	109	94	31	125
Stance	32	73	36	109	75	37	112
Total	65	155	63	218	169	68	237

Data Set

- Good balance
 - Even distribution by vowel height, tenseness, token length, lexical frequency (factors known to affect hyperarticulation measures)
 - BUT: Frequency of token types varies by speaker

Measures

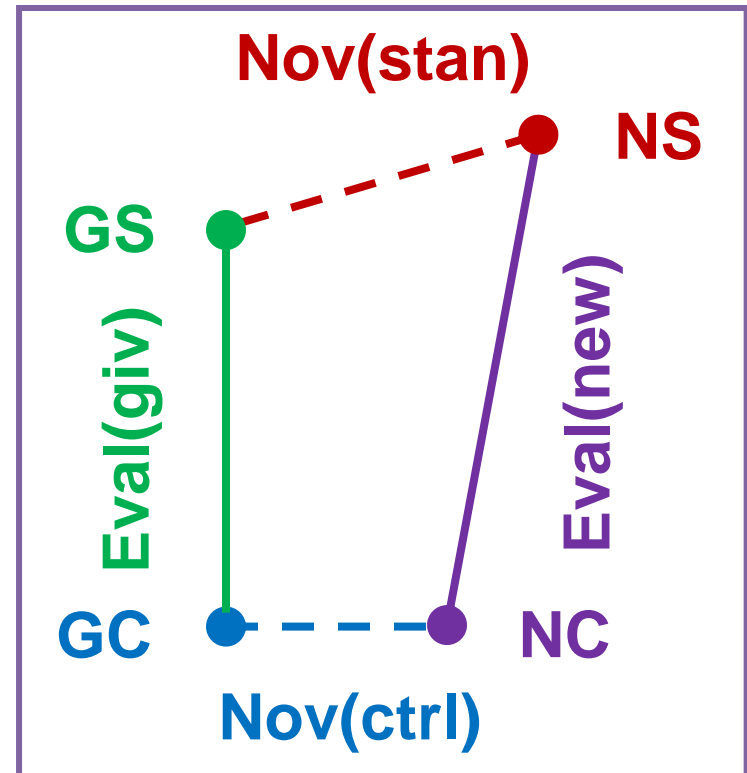
- Lengthening
 - Speech Rate of tokens (syllables/sec)
 - Duration of stressed vowels in tokens (ms)
- Pitch
 - Normalized pitch difference: amount a pitch deviates from speaker's mean pitch (z-score)
 - Pitch of each stressed vowel
 - Speaker mean pitch (z-score normalized mean of stressed vowel pitches)
 - Mean pitch differences for each token type

Measures: Vowel Space

- Vowel space (F1 x F2)
 - Euclidean distance between combinations of new/given and stance/control
 - Only analyzed vowel qualities with all four type combinations by same speaker (62 vowels total)
 - F1, F2 at midpoint (Hz) averaged within token type, within vowel quality, within speaker
 - Euclidean distances between token type means

Vowel Space Conceptual Diagram

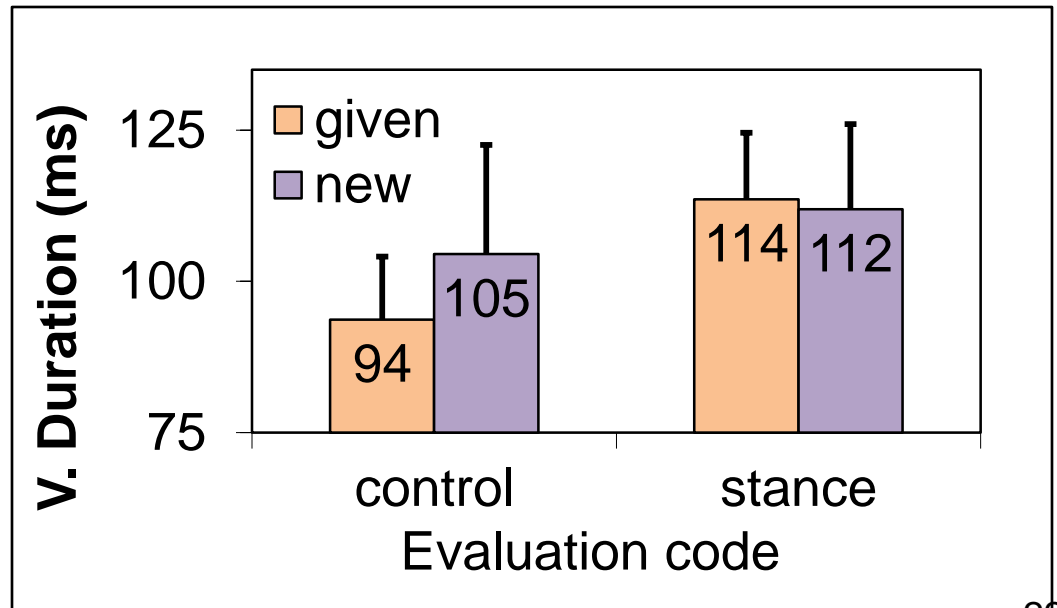
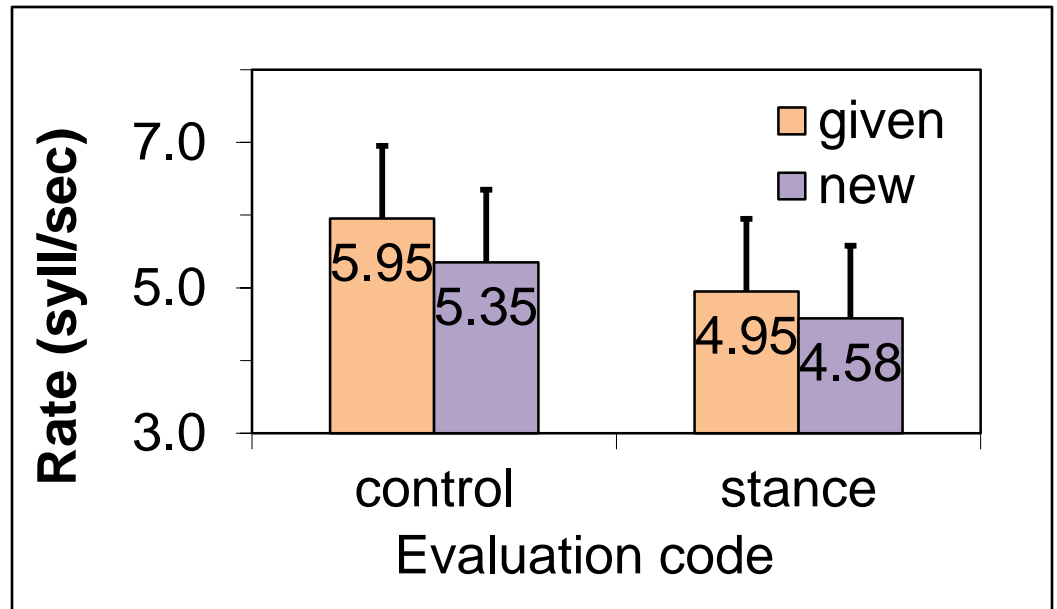
- Nodes: mean F1xF2 of vowel quality with type combo (new/given + stance/control)
- Lines: Euclidean distances, representing effect of one dimension (Novelty/Evaluation) on tokens of one level of the other



Results: Lengthening

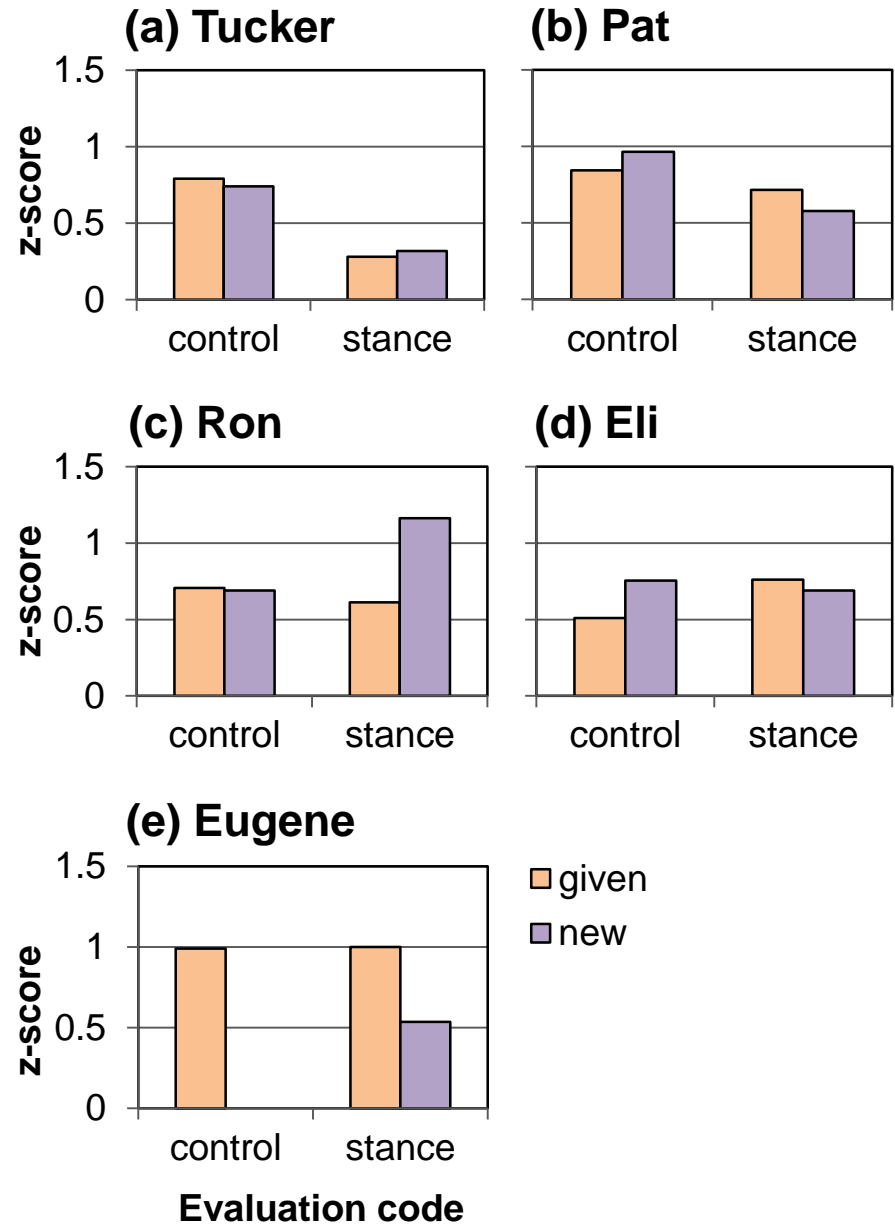
- Significant main effects (three-way ANOVAs)
 - Speech Rate (syllables/sec, $p < 0.01$):
 - Evaluation: *Stance* slower than *Control*
 - Novelty: *New* slower than *Given*
 - Speaker
 - Evaluation/Speaker interaction
 - Stressed Vowel Duration (ms, $p < 0.01$)
 - Evaluation: *Stance* slower than *Control*
 - Speaker
 - Evaluation/Speaker interaction

- Novelty-Evaluation interaction: non-significant trend in the expected direction



Results: Pitch

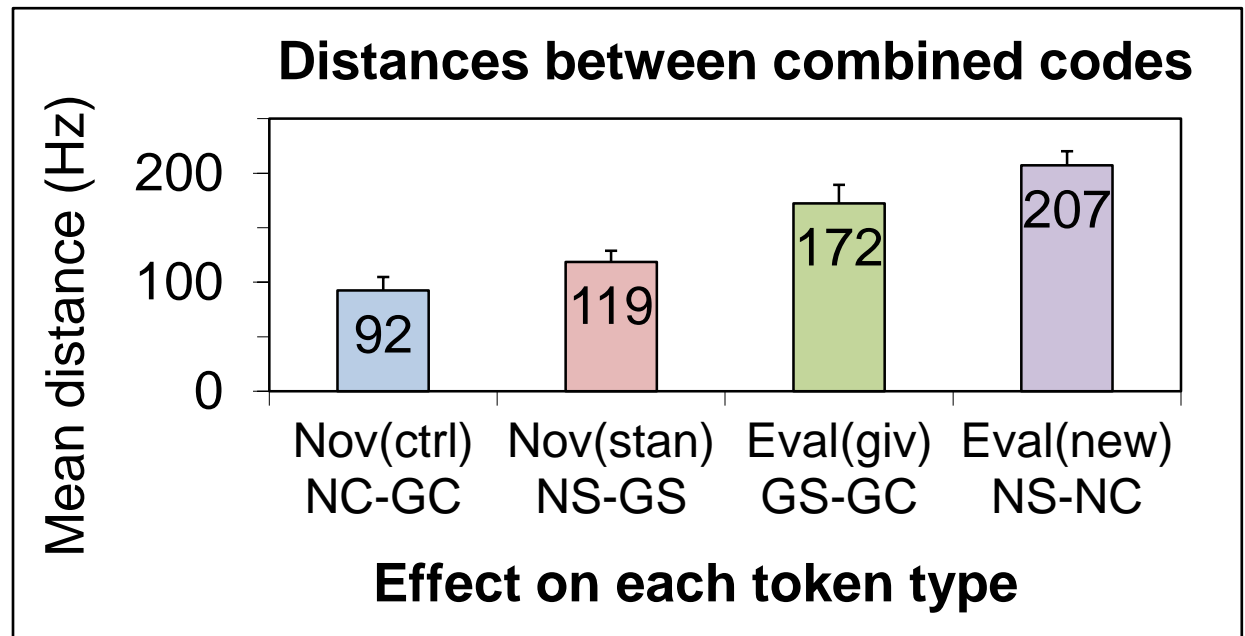
- No significant group effects
- Wide individual variation
 - Different strategies?



Results: Vowel Space

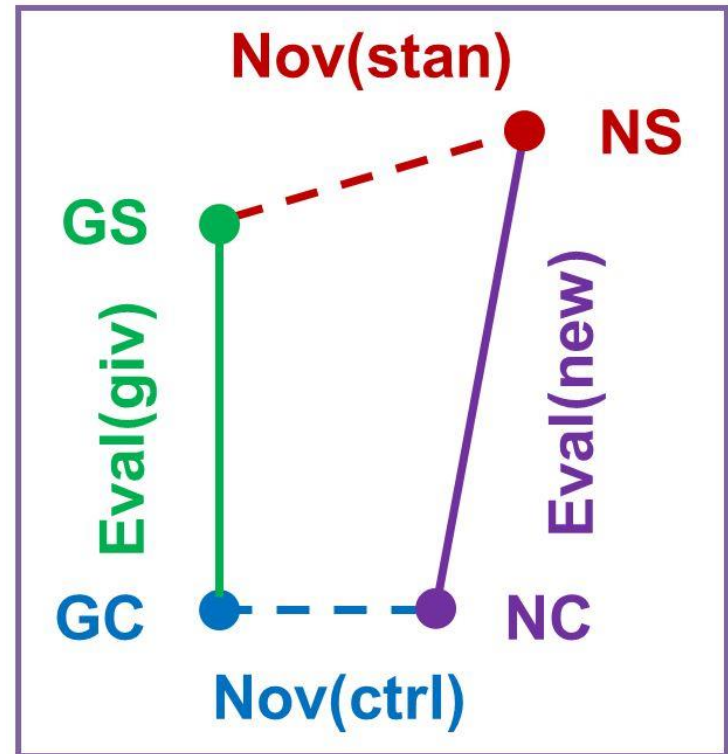
- Expected pattern
 - Evaluation has greater effect than Novelty overall
 - Evaluation affects *new* more than *given* tokens
 - Novelty affects *stance* more than *control* tokens

- T-tests: only Nov(ctrl) and Eval(new) significantly different



Vowel Space Conceptual Diagram

- Nodes: mean F1xF2 of vowel quality with type combo (new/given + stance/control)
- Lines: Euclidean distances, representing effect of one dimension (Novelty/Evaluation) on tokens of one level of the other



Conclusions

- Support for all three hypotheses:
 - H1: There is an effect for Novelty
 - Speech Rate: New information hyperarticulated
 - H2: There is an effect for Evaluation
 - Rate & Duration: Stance-expressing tokens hyperarticulated compared to neutral tokens
 - H3: There is a Novelty-Evaluation interaction
 - Speech Rate (& Vowel Space): Evaluation has greater effect than Novelty overall
 - Individual variation strong for Pitch differences

However...

- Linear Mixed Effects (Speaker as random effect)
 - Speech Rate (syllables/sec, $p < 0.01$):
 - ~~Evaluation~~
 - **Novelty**
 - Stressed Vowel Duration (ms, $p < 0.01$)
 - ~~Evaluation~~

Future Work

- Larger corpus (ATAROS)
 - Stance-dense interactions
 - Increasing levels of engagement
 - Control dialect region (PNW)
 - Control dyad makeup (gender, age, familiarity)
- Improved phonetic measures
 - More sophisticated vowel space, pitch measures
 - Phrase-level analysis
- Finer stance distinctions

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