

Variation in English Infant-Directed Speech

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I. Introduction

- Casual adult-directed speech (ADS) has copious phonetic variation [e.g., 4]
- In contrast, infant-directed speech (IDS) has been previously argued to be more canonical (faithful to dictionary pronunciation) [5][6]
- However, recent studies find IDS and ADS to be equally variable [2]
- Typically, IDS variation examined word-finally
- But cross-linguistically in adult grammars, onset positions are more phonologically stable and salient [1]

Does the extent of phonetic variation in IDS differ based on segment position in a word?

II. Methods

- IDS from Providence Corpus (longitudinal) [3]
 - 6 monolingual English-speaking 1- to 3-year-olds interacting with parents (usually mothers) at home during everyday activities
 - Data from two age ranges, 16-18 and 22-24-month-old
- Utterances with coronal stops and fricatives (/t/, /d/, /n/, /s/, /z/) identified using orthography
- Forced-alignment [7]
- Alignment check, phonetic transcription of allophonic variants by 3 phonetically-trained native speakers of English,
- Automated data extraction, problematic tokens (alignment/transcription error) rechecked by 4 phonetically-trained native speakers of English
- Segments coded for

Target sound	Phonetic realization	Position in word	Preceding segment	Following segment	Word	Part of speech
t	?	final	'V	n	cat [now]	content
s	s	medial	p	t	upstairs	content

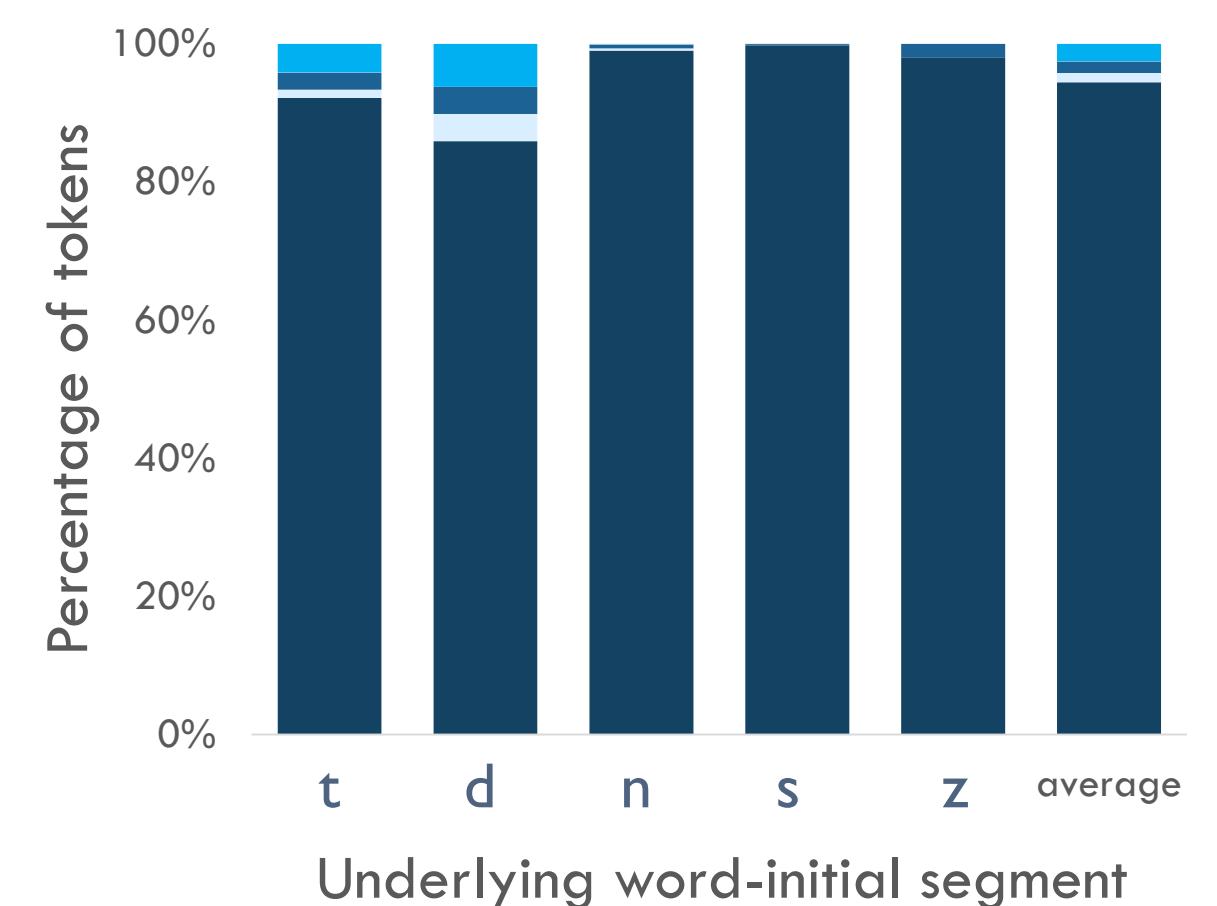
• Final corpus: 28,775 segments

• Currently processed: 25,296 segments

III. Results – Variants by position

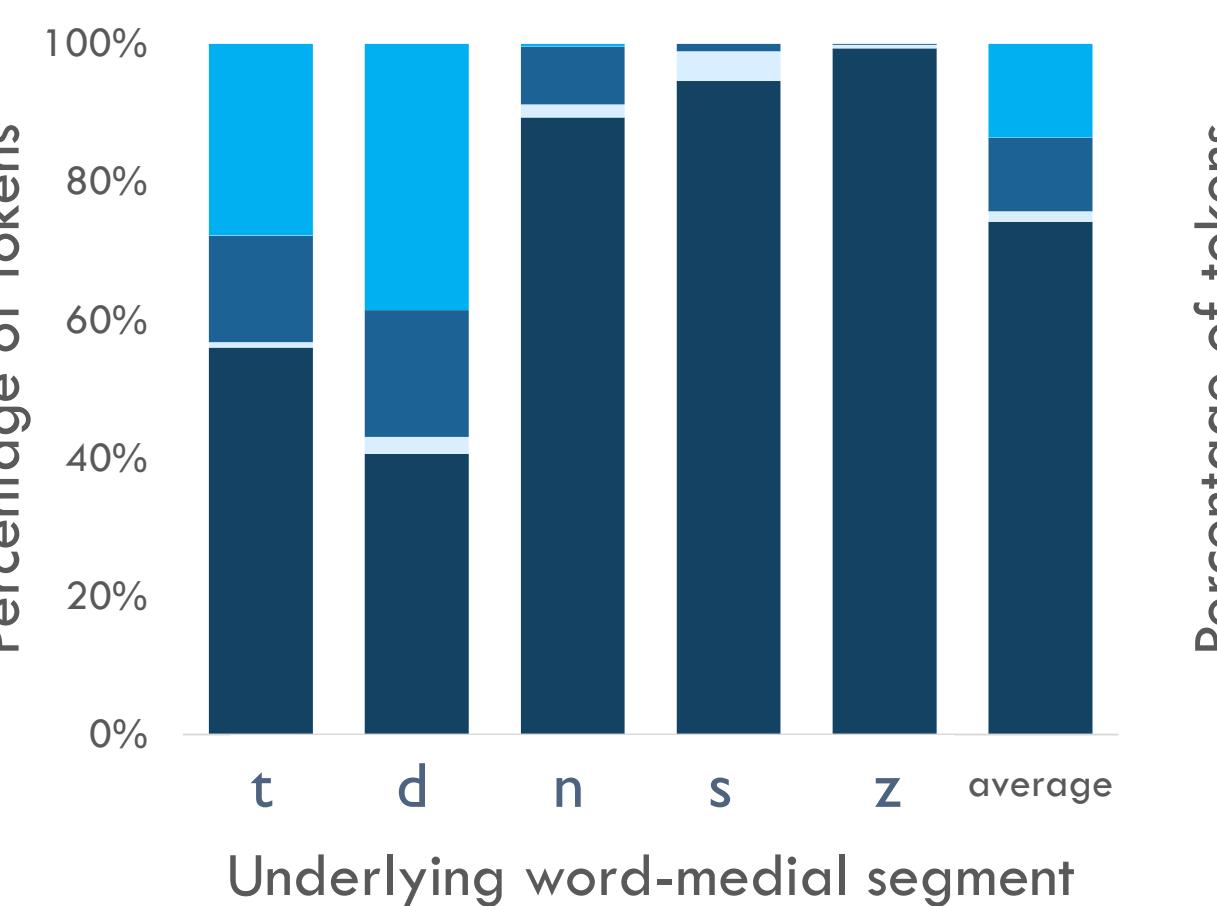
Onset (7,054 tokens)

- Canonical variant [released stop/fricative] was **the most** frequent variant for every segment



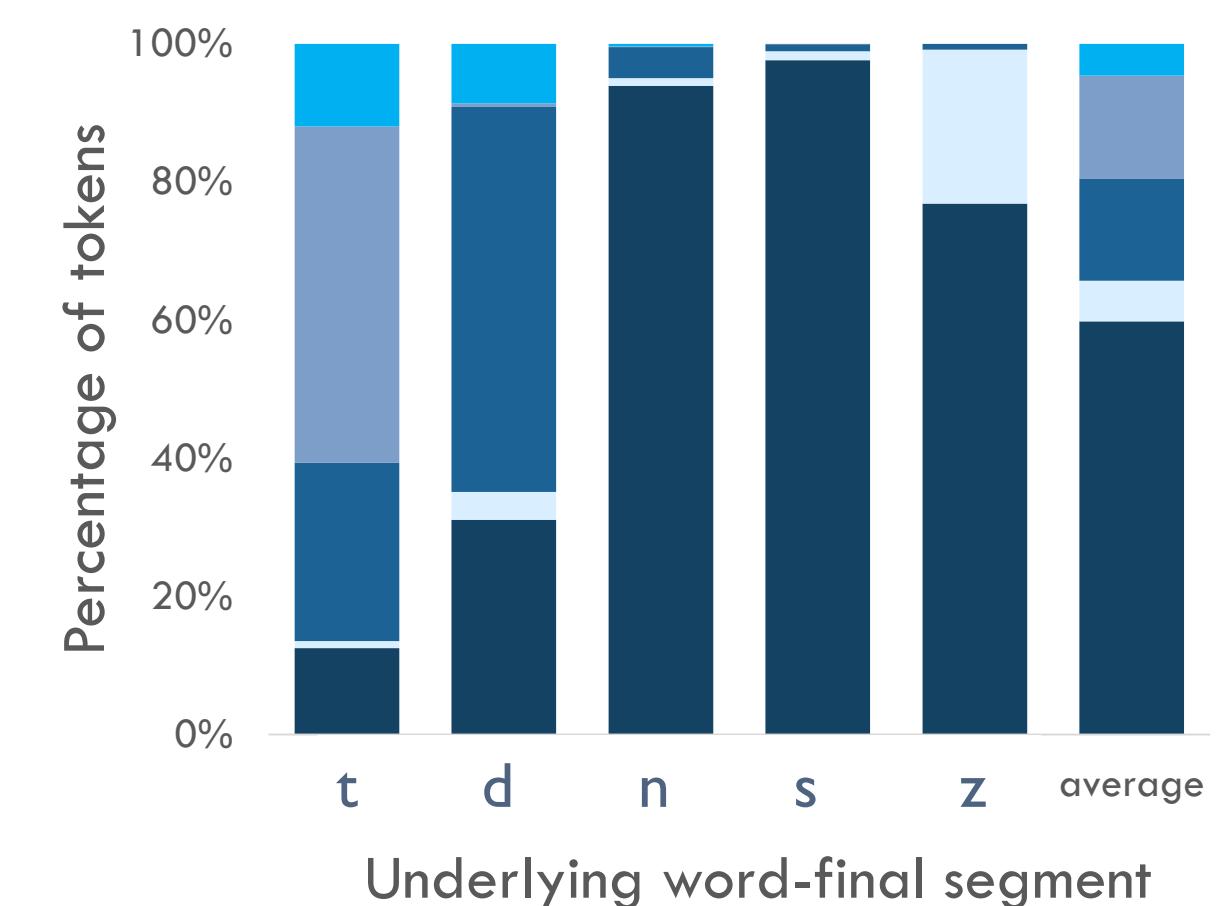
Medial (7,095 tokens)

- Canonical variant was still **the most** frequent variant for every segment, but to a lesser degree



Coda (11,147 tokens)

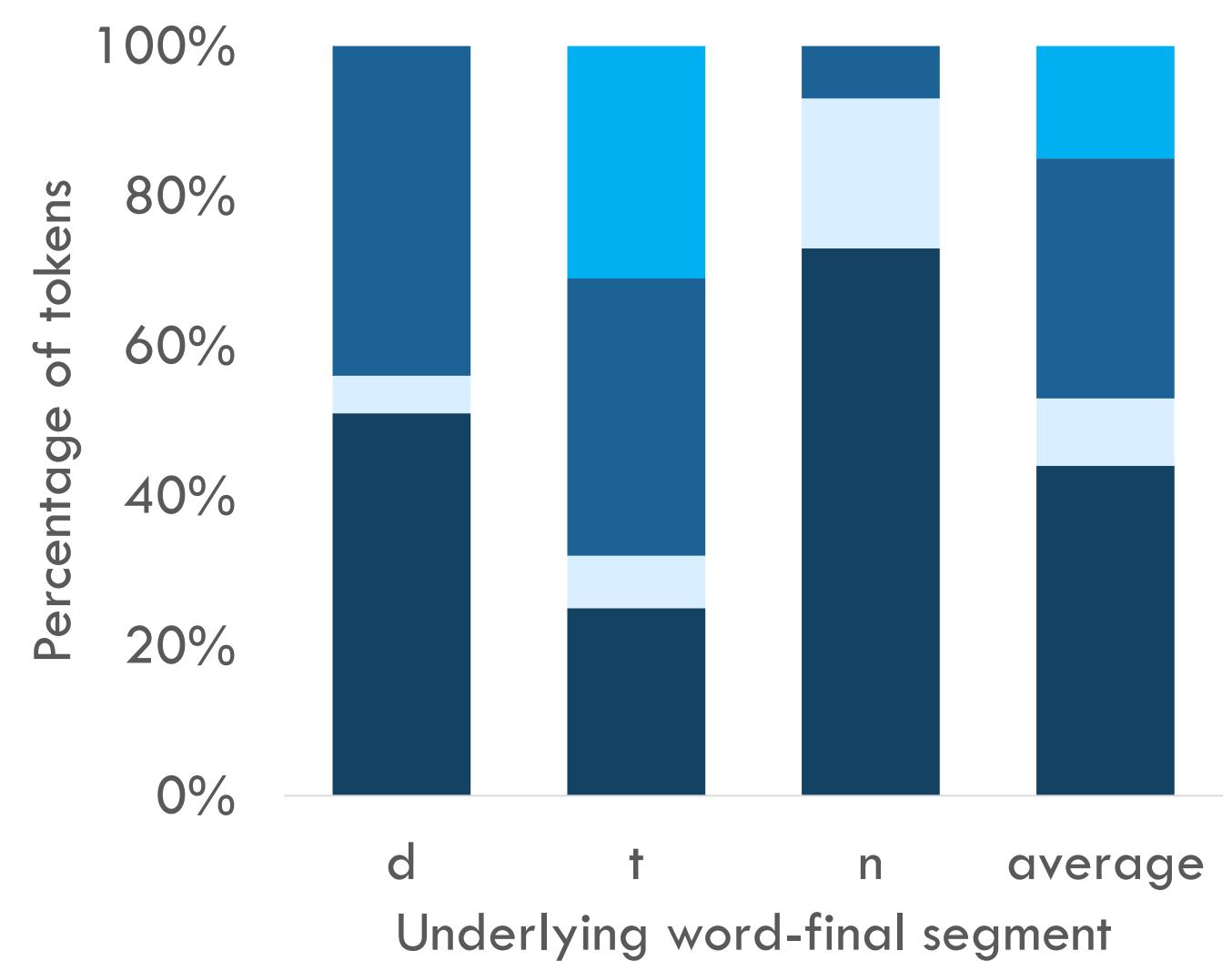
- Canonical variant is **not the most frequent variant** for either /t/ (13%) or /d/ (31%)
- Large differences by segment



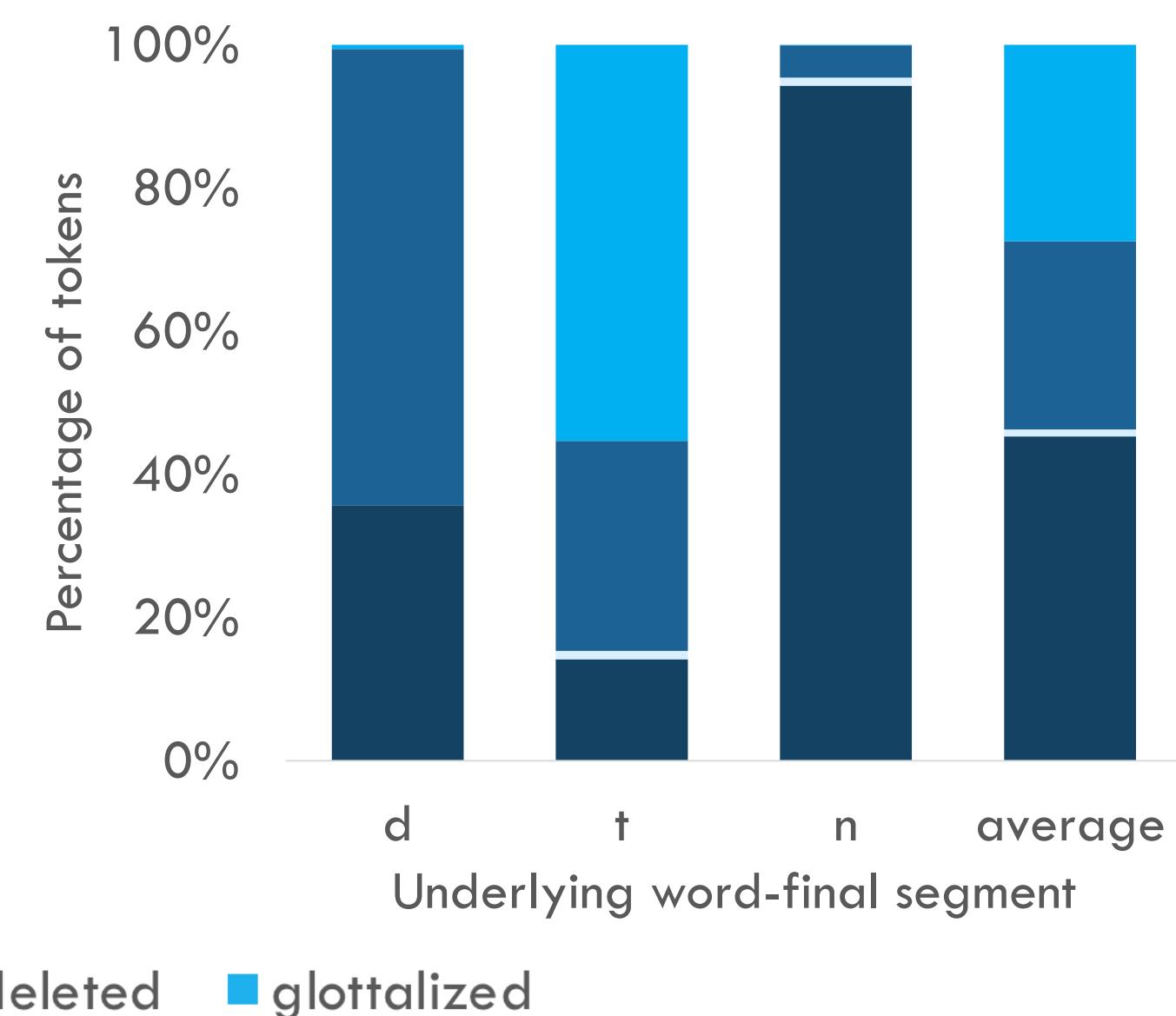
IV. Results - Comparison to ADS

- Comparing a subset of our IDS data in assimilation contexts (word-final /d/, /t/ and /n/, 725 tokens) directly to the ADS study by [4] (4349 tokens)
- Less canonical in current IDS study: $\chi^2(2,323, N = 2,324) = 56.77, p < .001$
 $\chi^2(1,308, N = 1,309) = 33.33, p < .001$
- Similarly variable in current IDS study: /n/ ($\chi^2(1,117, N = 1,118) = 0.03, p = 0.86$)

ADS (Dilley & Pitt, 2007)



IDS (Current study)



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