

## I. The claims

### 1. 'Checked tones' as monomoraic syllables

- Traditionally transcribed as closed syllables with /ʔ/ codas (Qian 1992, Wang 2011)
- No phonetic study has confirmed the existence of coda glottal stops
- Based on my fieldwork acoustic data, they are **plain short vowels in monomoraic (open) syllables**
- First-time phonetic evidence of monomoraic syllables in Chinese languages

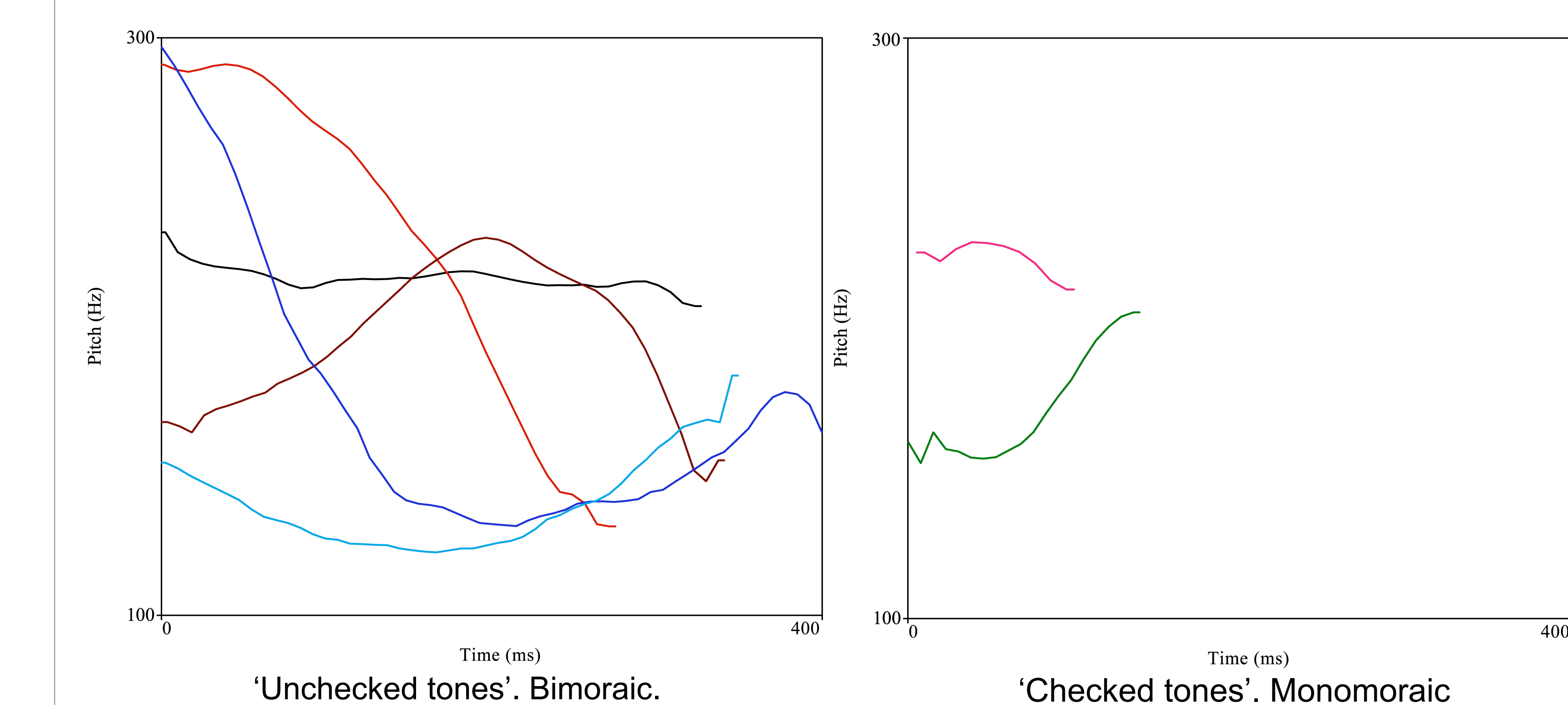
### 2. 'Exceptional' light-initial sandhi patterns

- The second syllable can influence tone sandhi **only** when the initial syllable is light ('checked') — I refer to this as 'light-initial sandhi'
- Counter to previous descriptions, where only the initial syllable determines the sandhi pitch pattern ('Left dominance')(Duanmu 1999, Shi & Jiang 2013)
- I propose a more refined foot-based analysis to this novel light-initial pattern

## II. Background

### 1. Lexical tones in Suzhou

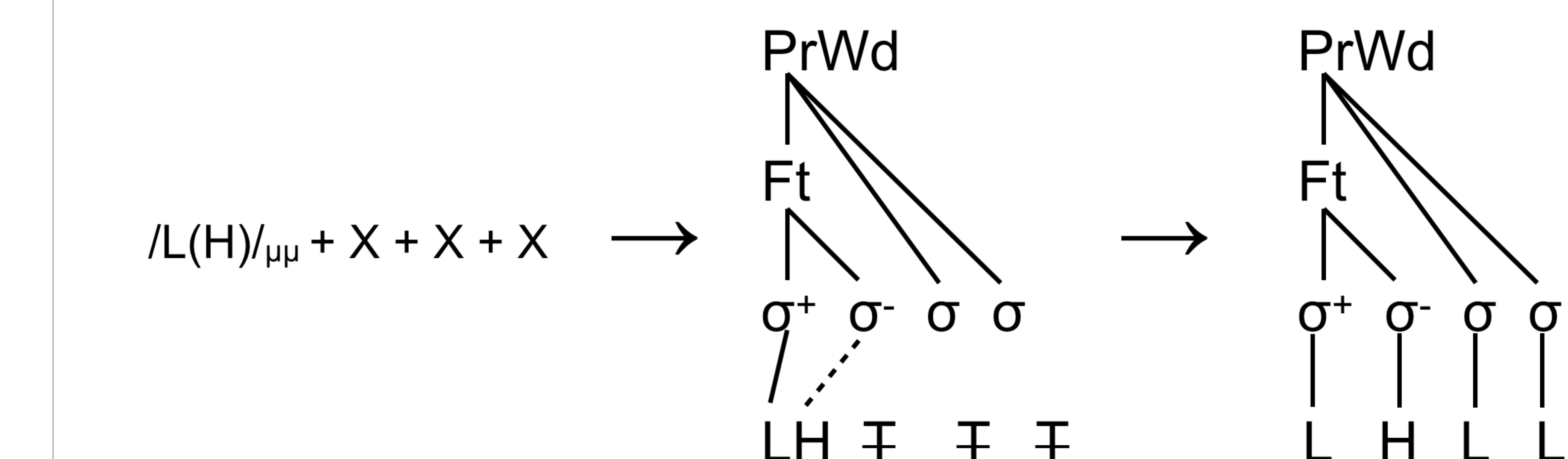
- A Northern Wu dialect with seven lexical tones



Bimoraic, T <sub>μμ</sub>					Monomoraic, T <sub>μ</sub>	
[H]	[LH]	[HL]	[HLH]	[LHL]	[H]	[LH]

### 2. Left dominance: the traditional tone-sandhi analysis

- Assumed for many Wu dialects (Chan & Ren 1989 for Wuxi, Duanmu 1999 for Shanghai, Chan 1995 for Danyang, Shi & Jiang 2013 for Suzhou)
- Initial syllable determines the surface pitch**; everything else is irrelevant
- Captured by left-aligned, non-iterative syllabic trochees
- A strong syllable (σ<sup>+</sup>) retains its tonal material; a weak footed syllable (σ<sup>-</sup>) can receive tone through re-association, but cannot retain its own tone; third & fourth syllables are unfooted and always surface with default L tones. (Shi & Jiang 2013)



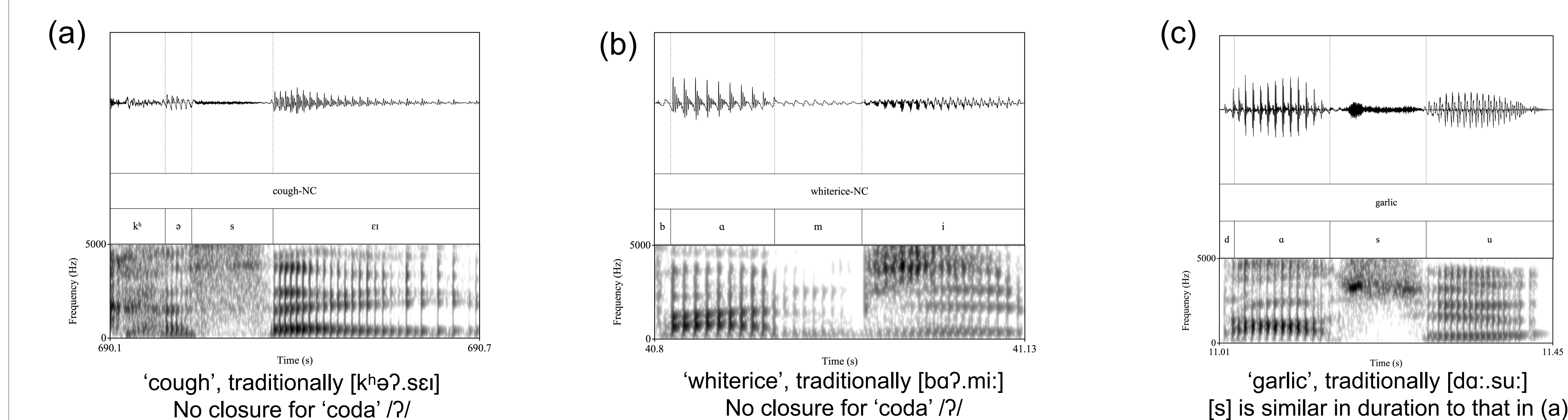
- My fieldwork data shows 'exceptions' to this generalization

## III. Findings of the current study

- All phonetic data comes from my fieldwork, mainly consisting of disyllabic nouns elicited in a carrier sentence

### 1. No phonetic evidence for /ʔ/

- No coda stop closure for the 'checked tones' (a and b)
- Intervocalic consonant durations are the same for 'checked' / 'unchecked' tones (a vs. c)
- 'Unchecked' vowels (≈250ms in running speech) are more than twice as long as 'checked' ones (≈100ms)

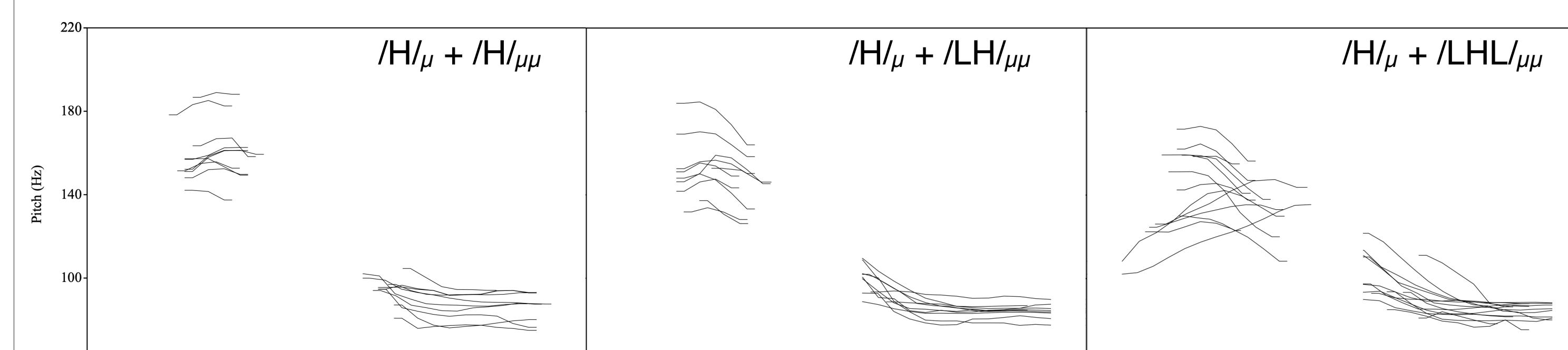


- Conclusion: 'checked tones' are light monomoraic open syllables (e.g. [kʰə.sɿ])**

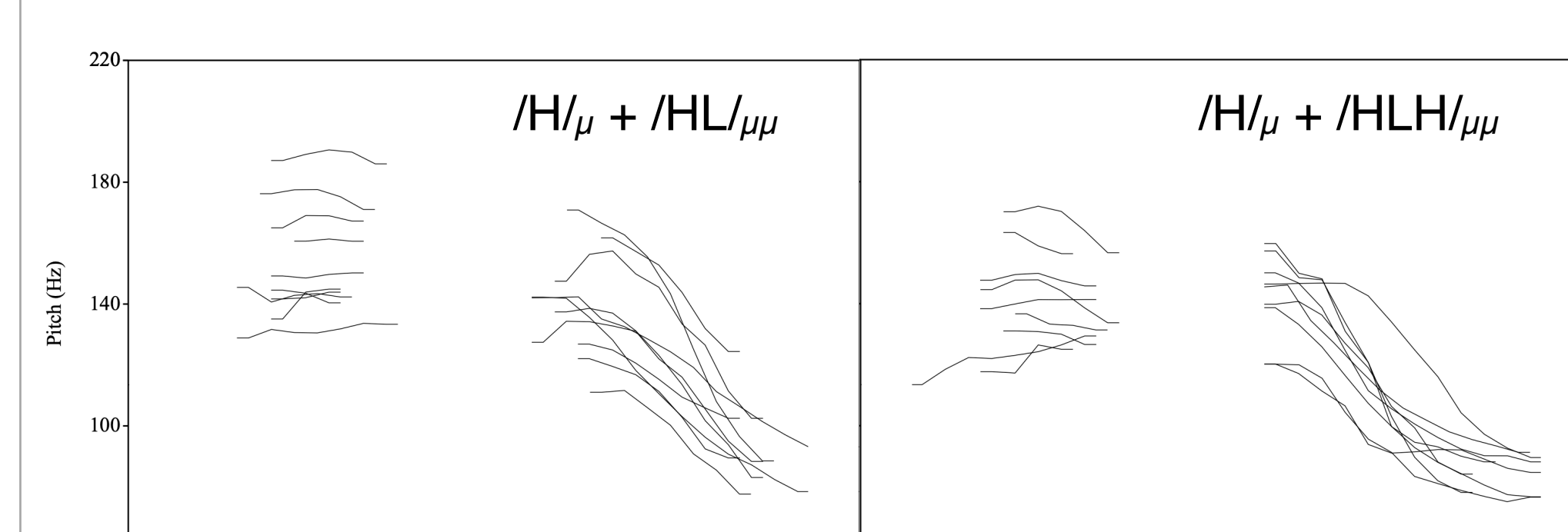
### 2. Second syllable plays a role in light-initial sandhi forms

- What we would expect if the traditional analysis were true: /H/μ + T = [Hμ.Lμμ] and /LH/μ + T = [Lμ.HμLμ]

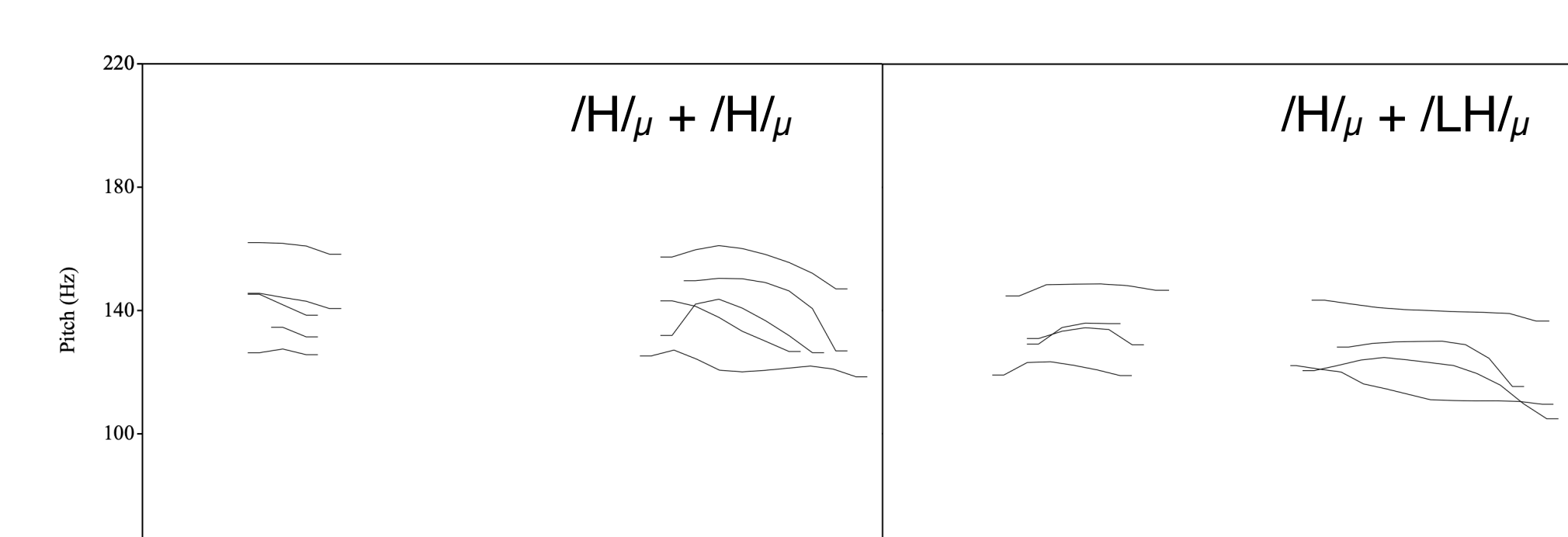
- Pattern A: [Hμ.Lμμ]



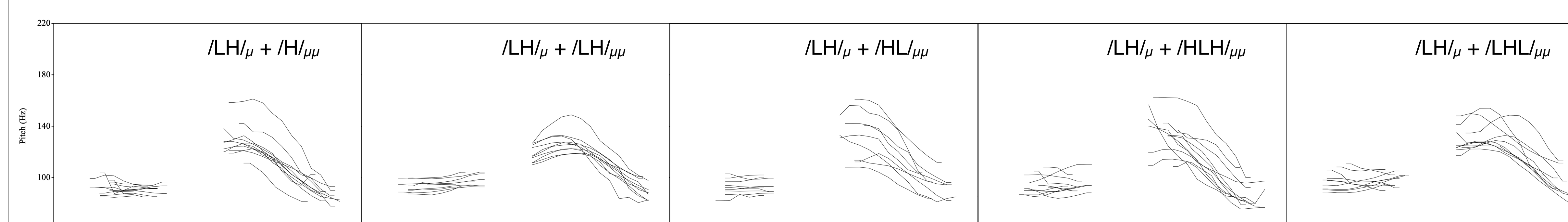
- Pattern B: [Hμ.HμLμ]



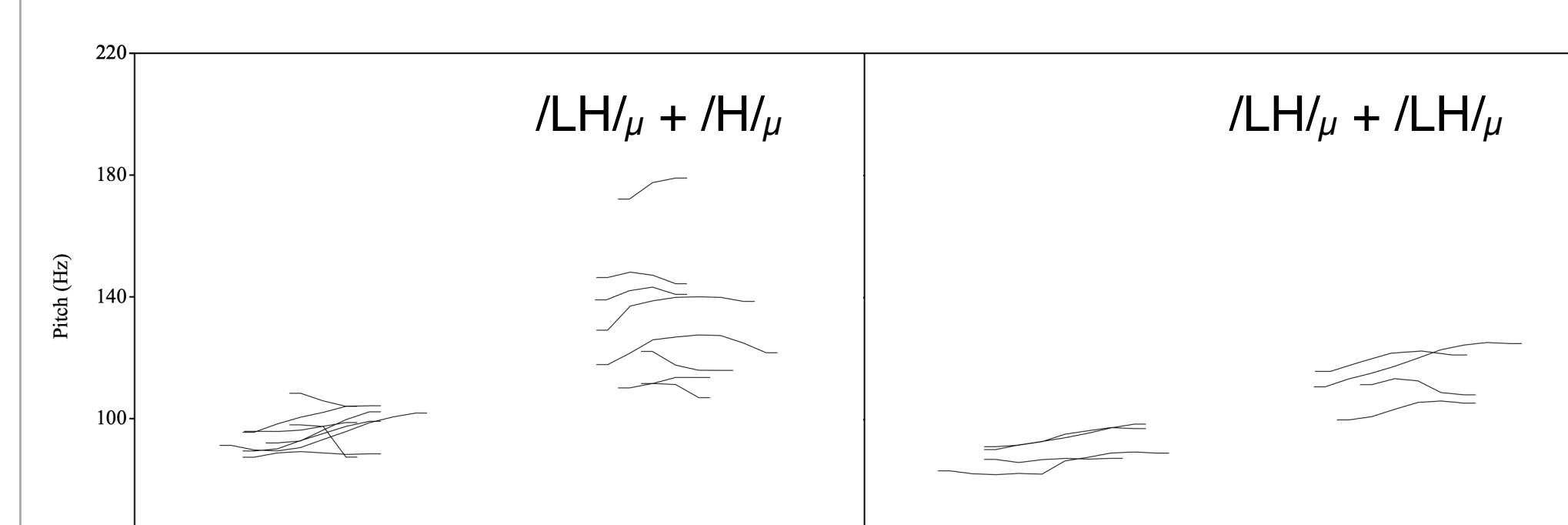
- Pattern C: [Hμ.Hμ]



- Pattern D: [Lμ.HμLμ]



- Pattern E: [Lμ.Hμ]



Rows: initial tone Columns: second tone	/T/μ + /T/μμ					/T/μ + /T/μ		Traditional Account
	/H/μμ	/LH/μμ	/HL/μμ	/HLH/μμ	/LHL/μμ	/H/μ	/LH/μ	
/H/μ	A	A	<b>B</b>	<b>B</b>	A	<b>C</b>	<b>C</b>	A
/LH/μ	D	D	D	D	D	<b>E</b>	<b>E</b>	D

- A: [Hμ.Lμμ]
- B: [Hμ.HμLμ]
- C: [Hμ.Hμ]
- D: [Lμ.HμLμ]
- E: [Lμ.Hμ]

- Conclusion: When the initial syllable is light in a disyllabic word, the second syllable influences the sandhi form**

## IV. Analysis for the light-initial sandhi

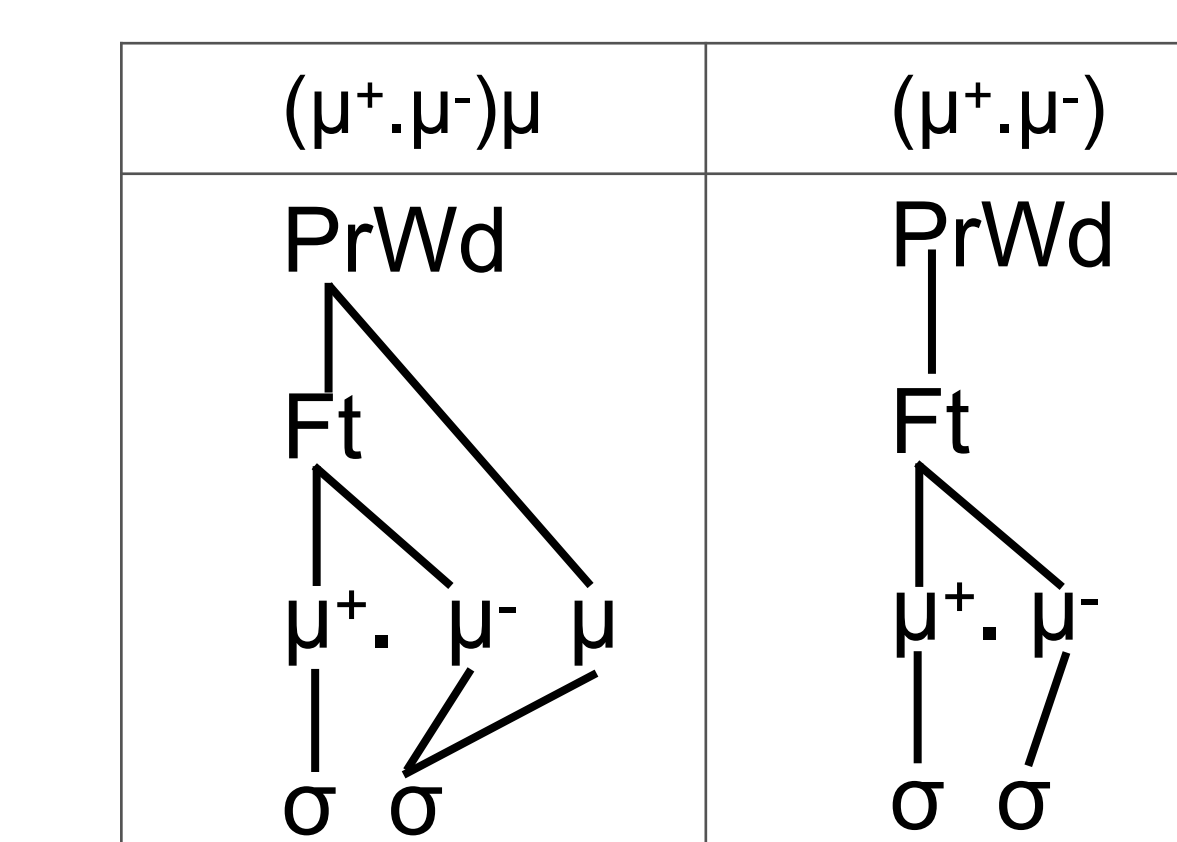
### 1. Tones

- Underlying tones with brackets (T) are floating
- Surface tones with underlining [ ] are short (monomoraic) in duration

Bimoraic, T <sub>μμ</sub>					Monomoraic, T <sub>μ</sub>	
/ (H) / <sub>μμ</sub>	/L(H) / <sub>μμ</sub>	/HL / <sub>μμ</sub>	/H(LH) / <sub>μμ</sub>	/L(HL) / <sub>μμ</sub>	/H / <sub>μ</sub>	/L(H) / <sub>μ</sub>
[H]	[LH]	[HL]	[HLH]	[LHL]	[H]	[LH]
μ μ	μ μ	μ μ	μ μ	μ μ	μ	μ
H	L H	H L	H L H	L H L	H	L H

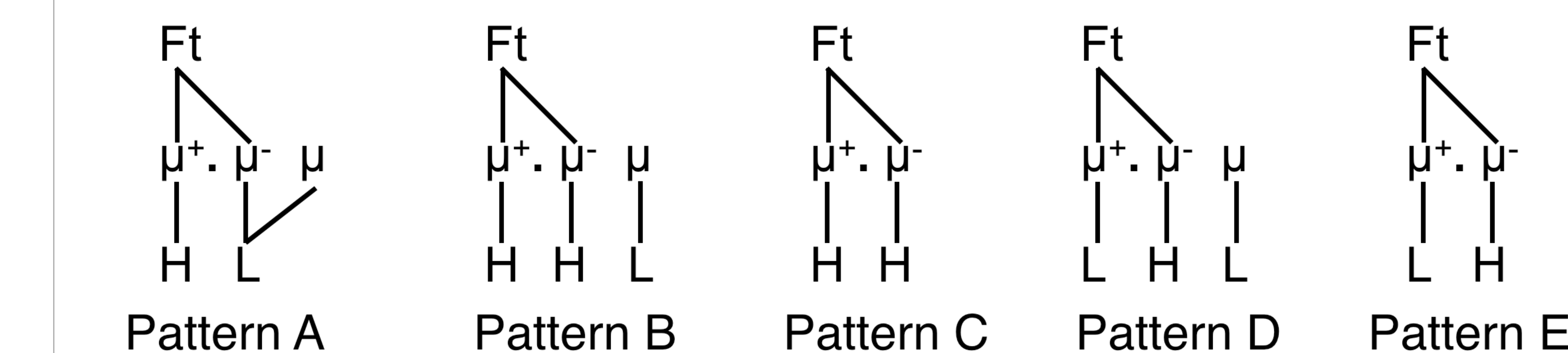
### 2. Relevant metrical structure

- In light-initial sandhi, the relevant metrical structure is a **left-aligned bimoraic trochee** (Kager 1993)
- Violates syllable integrity, but ensures that the head (monomoraic) is *not lighter in quantity* than the dependent (Head-Dependent Asymmetries) (Kager & Martínez-Paricio 2018, Drescher & van der Hulst 1998)



### 3. Basics of the OT analysis

- TBU = μ; Tones surface with full contours in isolation
- Tone sandhi: association is one-to-one, left-to-right
- Every mora has to have a tone; toneless moras receive a default L (Anttila & Bodomo 2000, Yip 2002, Zhang 2002b, Gussenhoven 2004)
- T → μ, μ → T, ALIGN-R-CONTOUR, ALIGN-L-TONE
- SPECIFY >> DEP-T
- All tonal material from the initial morpheme must be preserved (Shi & Jiang 2013)
- MAX-T-INITIAL
- Unfooted (third) moras never carry H tones on the surface (Breteler 2017)
- \*NON-Ft/H
- Pre-associated tones are preserved; floating ones can be deleted (Morén 2001)
- MAX-LINK >> MAX-T
- Tones cannot spread across syllables (Köhnlein 2011)
- NOSPREAD-σ



## IV. Conclusions

- A new piece of phonetic data:

- Absence of coda glottal closure in 'checked' syllables
- Emergence of (stressed) light syllables in Wu Chinese

- A phonological argument for quantity-sensitive foot formation:

- Second syllables are relevant in light-initial sandhi
- Disyllabic trochees when initial syllable is heavy, bimoraic trochees when initial syllable is light