

**Wagner 2012: “Locality in phonology and production planning”**

presented by Kie, 3 Oct. 2017

**1. Highlights**

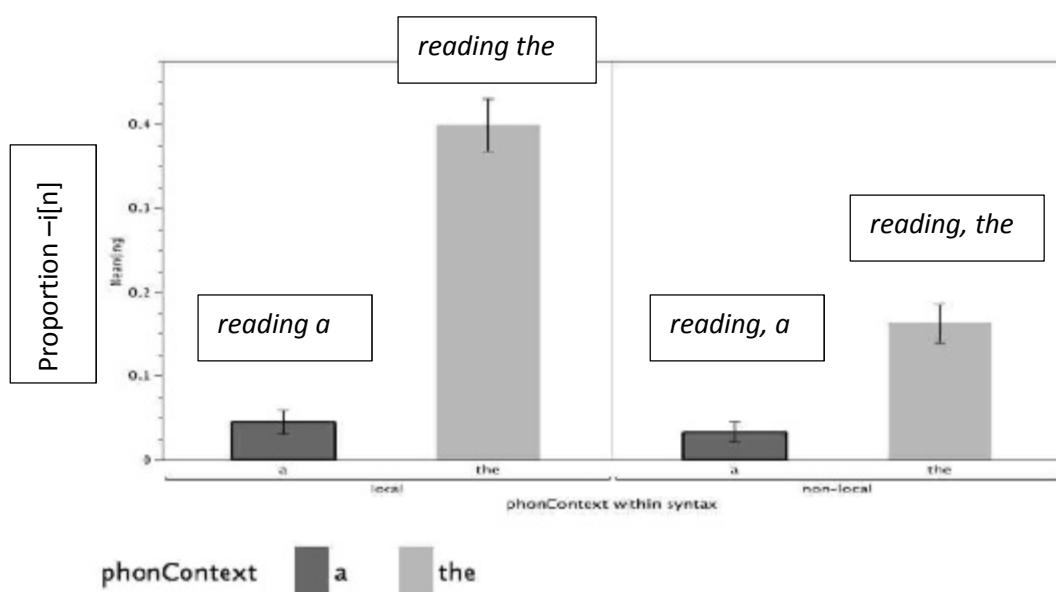
- Lays out research program for Production Planning Hypothesis
  - hypotheses about directionality, specificity, syntax, frequency...
  - speculates about English tapping, French liaison, Mandarin 3<sup>rd</sup> tone sandhi vs. Xiamen tone sandhi
- Production experiment on English *-ing/-in'* variation
  - effect of following word's initial sound is weaker if syntactic/prosodic boundary intervenes

**2. Syntactic effects on phonology**

- e.g., English tapping is less likely to apply across a clause boundary
  - more likely: *The camel, though he rode it, was certainly bumpy*
  - less likely: *Although it was not the first camel he rode, it was certainly the last one* (Nespor & Vogel 1986, p. 225)
- Possible causes
  - Phonological rules/constraints refer to syntactic boundaries/constituents
    - One condition for tapping could be: “...and if followed by a vowel with no intervening clause boundary”
  - Syntactic structure projects a phonological structure, which phonological rules/constraints then use (Selkirk 1984; Nespor & Vogel 1986)
    - “...and if followed by a vowel within the same Intonational Phrase”
  - Syntax cyclically serves up bigger and bigger chunks to the phonology (Chomsky & Halle 1968)
    - *he rode it* vs. *he rode*
    - plus some penalty for later undoing a decision to not tap
  - **Proposal here:** the speech planning system gradually serves up material to the phonology
    - Phonology just says “tap whenever a word-final /t, d/ is preceded by a vowel (plus optional /ɪ/) and the next word starts with a vowel”
    - But if the fact that the next word starts with a vowel isn't available in time, a stop will get planned
    - Syntax's effect on phonology is really just syntax's effect on when words' phonological contents become available

### 3. Main case study: English –ing/-in'

- variation: *reading* vs. *readin'*
  - -in' is more likely when followed by coronal
    - *While the man was readi[n] the book, the glass fell off the table*
    - *While the man was readi[ŋ] a book, the glass fell off the table* (p. 3)
  - -in' is more likely when actual suffix (*reading* vs. *ceiling*)
    - so not pure assimilation—more like allomorph selection
- Predicted effect of clause boundary?
  - *While the man was **reading** the/a book, the glass fell off the table*
  - *While the man was **reading**, the/a book fell off the table*
- Production experiment
  - Participants read sentences like the above aloud



- Always more -in' before *the* than before *a*
  - i.e., light bars taller than dark bars
- **Locality**: but the effect is much stronger when no intervening comma (clause boundary or intonational boundary)
- Syntax, prosody, or planning?
  - Regression model of *the* data: added in duration of *the* as proxy for strength of prosodic break
    - Syntactic effect goes away! (highly correlated with syntactic condition)
    - Duration of *the* significantly predicts outcome even within each syntactic condition
    - So there's more to it than just clause boundary vs. no clause boundary

- Added in normalized duration of verb
  - “similar results”
- Looking ahead to papers you will be presenting this week: these durations could also be a proxy for planning
  - if *reading* is lengthened, could be because upcoming word isn’t ready yet

#### 4. Prediction: directional asymmetry

- Rules that look to following material (rhythm rule, 3<sup>rd</sup> tone sandhi) should be more variable than rules that look to preceding material (raddoppiamento sintattico)
  - because following material might not be available yet
  - see upcoming presentation of **Lamontagne & Torreira 2017** for direction comparison

#### 5. Prediction: more variation across phrase boundaries

- English *a/an* alternation is pretty invariable (in some dialects—see Smith 2015), because the syntactic/prosodic break before following word is so weak

#### 6. Prediction: frequency and predictability

(only briefly mentioned, but subsequent work we’ll be hearing about spells it out more)

- Frequent combinations should undergo rules more
  - *they rode over* vs. *they strode over* (tapping)
- Frequent/predictable word2 should make word1 more likely to undergo rule that relies on word2 information
  - *cat attack* vs. *cat attenuation*

#### 7. Prediction: specificity

- Standard Chinese 3<sup>rd</sup> Tone Sandhi (xiao3 ma3 → xiao2 ma3) requires you to know two things
  - there is a following syllable
  - it has third tone
- Xiamen tone sandhi (Chen 1987)
  - variety of Min Nan (Southern Min) Chinese, aka Amoy<sup>1</sup>
  - similar phenomena in related varieties
  - all you have to know is that there is a following syllable



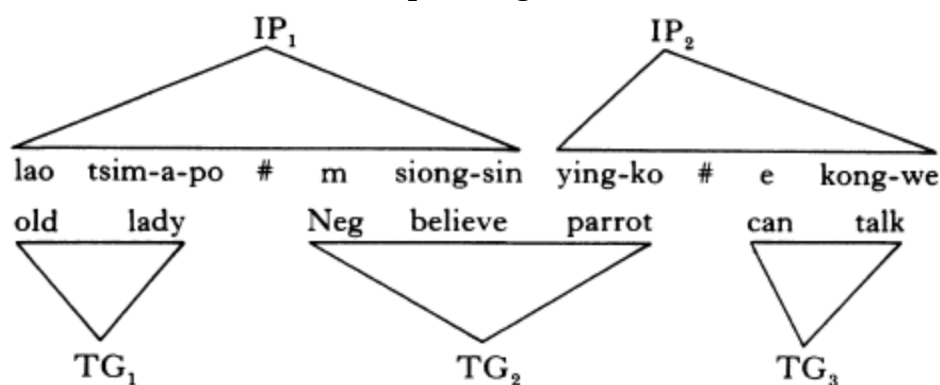
<sup>1</sup> map: By Uwe Dederig - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=9638850>

- every tone changes if it's non-final
- example: all but the last tone change

#	yi	kiong-kiong	kio	gua	ke	k'uah	puah	tiam-tsing	ku	ts'eq	#	
44	24	24	21	53	44	21	21	53	44	53	32	underlying tone
22	22	22	53	44	22	53	53	44	22	44		surface tone
	he	by force	cause	I	more	read	half	hour	long	book		
	'He insisted that I read for another half an hour'											

(Chen 1987, p. 113)

- Difference between the two rules' domains
  - 3<sup>rd</sup> Tone Sandhi is said to correspond well to surface phonological phrasing
  - Xiamen tone sandhi has syntactically defined domains that are totally different from the intonational phrasing!



(Chen 1987, p. 143)

- Wagner's interpretation
  - Xiamen sandhi's domain can cross intonational breaks because the speaker probably knows already whether there is an upcoming word
  - but 3<sup>rd</sup> Tone Sandhi doesn't like to cross an intonational break, because the tone of the upcoming word is likely not known in time

## 8. Predictions for French liaison [I guess I should comment after Jesse's presentation about whether these were fulfilled!]

- Liaison: certain words optionally end in a consonant, only if the next word begins with a vowel
  - *petit garçon* [pəti ɡarsɔ̃] 'little boy'
  - *petit enfant* [pəti t ɑ̃fɑ̃] 'little child'
  - but only if the syntax is right: *petit en comparaison* [pəti ɑ̃ kɔ̃paʁezɔ̃]
- Predictions
  - when prosodic boundary between the two words is weak, liaison should apply more often
    - more likely that info is available about whether word2 starts with a vowel
  - speaking under time pressure (less time to prepare) should yield less liaison

- speech rate? could go either way
  - faster speech → less time to retrieve upcoming words (less liaison) but
  - speaker having easier time retrieving upcoming words (more liaison) → faster speech?
  - and faster speech → fewer/weaker prosodic boundaries (more liaison)
- Planning view could explain why formal speech has more liaison
  - formality → more planning → more liaison
  - testable hypothesis: do people plan further ahead in formal registers?

Pak & Friesner  
 2006: faster →  
 less liaison

## References (Pak & Friesner 2006)

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