French phrasal phonology

in a derivational model of PF

Marjorie Pak — mpak@ling.upenn.edu
Michael Friesner — friesner@ling.upenn.edu
University of Pennsylvania
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1. QUESTIONS

Why are some phrasal phonological rule domains influenced by speech rate (becoming systematically larger in faster speech and smaller in slow speech), while others are not? What are the theoretical implications of languages that have both kinds of rules?

2. PROPOSAL

There are (at least) two stages of phonological domain formation in PF:

Type 1 domains are determined by information available in the morphosyntax, before information about speech rate becomes available.
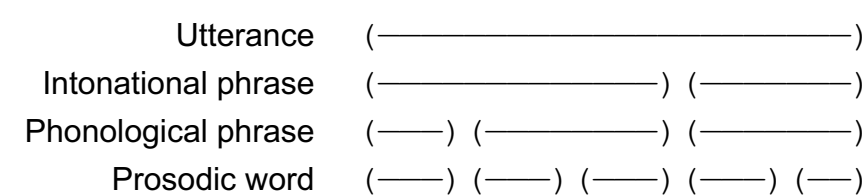
Type 2 domains are formed after heads have been chained together for input to the performance system, and can be influenced by factors like tempo during online speech production.

3. PROSODIC HIERARCHY THEORY

Our proposal diverges from most current versions of **prosodic hierarchy theory** (Nespor & Vogel 1986, Selkirk 1995, etc.), according to which:

1) Phonological rules refer only to prosodic constituent structure (Inkelas 1989)—i.e. some version of (2):

2) **Prosodic hierarchy:**

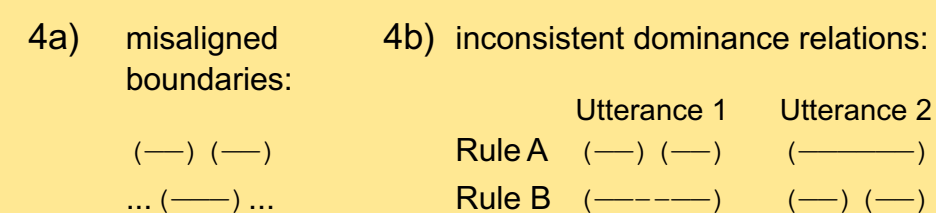|	
Utterance	(———————————————)
Intonational phrase	(———————————) (———)
Phonological phrase	(——) (———————) (———)
Prosodic word	(——) (——) (——) (——) (——)

(2) is derived from the syntax by a series of mapping algorithms, which all apply at a **single point**, resulting in a well-formed hierarchical structure.

3) **PREDICTION of prosodic hierarchy theory:**
Given a language with two rules applying to different domains, the domain for one rule should consistently and exhaustively contain the domain for the other.

So both of these should be ill-formed:

4a) misaligned boundaries:	4b) inconsistent dominance relations:

	Utterance 1	Utterance 2
(——) (——)	Rule A (——) (——)	(——) (——)
... (——) ...	Rule B (————)	(——) (——)

4. TWO PHRASAL RULES IN FRENCH

What is the relationship between liaison domains and phrasal accent domains?

Speakers read made-up news stories at self-selected fast and slow rates. Texts contain complex DPs with different syllable structures and liaison environments.
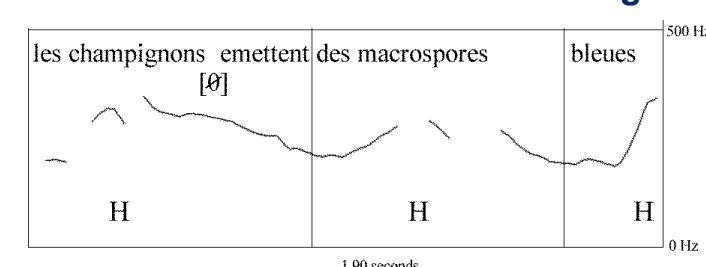
Liaison: a word-final latent consonant is phonetically realized before a vowel-initial word, under certain syntactic conditions

Phrasal accent: utterances are broken up into units of 1+ words, each unit ending with LH tone and sometimes beginning with (L)H as well (Jun & Fougeron 2000, 2002)

RESULTS Liaison domains and accent domains are: (a) not affected by speech rate in the same way, and (b) not in a consistent containment relationship.

Speech rate has a consistent effect on accent domains but not liaison domains. (see handout)
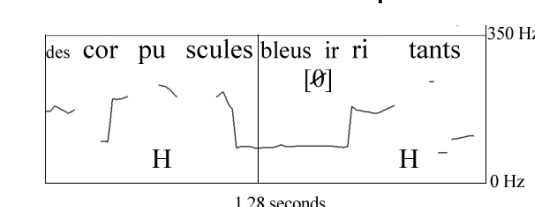
Sometimes accent domains are larger...

Subject + verb can form a single accent domain (no H at the end of *champignons*)—but liaison is never permitted here.
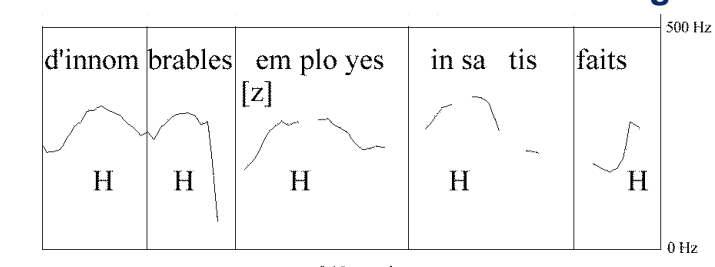
Accent: (les champignons émettent ...)
Liaison: (les champignons)(émettent...)
　　'the fungi give off [blue macrospores]'

Similar case with two postnominal adjectives:

Accent: (bleus irritants)
Liaison: (bleus)(irritants)
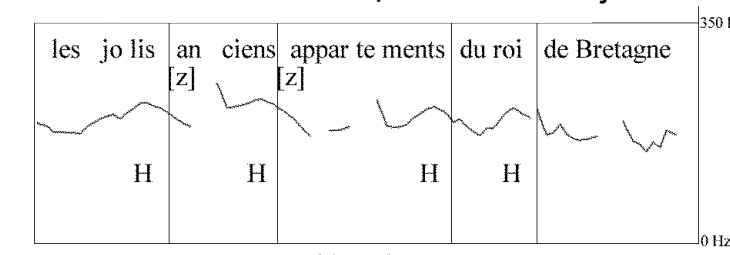　　'irritating blue [corpuscles]'

but sometimes liaison domains are larger.

Accent-domain boundary (H) between quantifier and noun; liaison crosses it.

Liaison: (d'innombrables employés...)
Accent: (d'innombrables)(employés...)
　　'innumerable [dissatisfied] employees'

Similar case with two prenominal adjectives:

Liaison: (les jolis anciens appartements...)
Accent: (les jolis)(anciens)(appartements...)
　　or (les jolis anciens)(appartements...)
　　'the pretty former apartments [of the king of Brittany]'

5. A LARGER PATTERN

Together with similar patterns in other languages, our results show that the prediction in (3) is not upheld universally.

Xiamen (Chen 1987): tone sandhi domains (#) can cross intonational-phrase boundaries (%):

5) lao tsim-a-po # m　siong-sin % ying-ko # e　kong-w
　old lady　　　neg believe　　parrot　can talk
　　'The old lady doesn't believe parrots can talk'

Intonational phrasing is variable; tone sandhi domains are not. This results in a configuration like (4a).

6. DEVELOPING THE PROPOSAL

We adopt an **articulated model of PF**, in which a series of postsyntactic PF operations (linearization, vocabulary insertion, rebracketing) are ordered with respect to one another (Embick and Noyer 2001, 2004, etc.).

Phonological domains can then be formed at different stages, ordered before/after other PF operations (Seidl 2001)—*and consequently have distinct sets of properties*.

Our Type 1 and Type 2 rules are crucially ordered before and after heads are chained together for input to the performance system.

■ French liaison and Xiamen tone sandhi are Type 1 rules. They can refer to information in the morphosyntax, but information about speech rate is not yet available when their domains are formed.

■ French final accent and Xiamen intonational phrasing (probably 'intonational phrasing' in general) are Type 2 processes. These domains are formed during/after chaining, and vary in size depending on tempo, syllable count, and eurythmic requirements.

Since Type 1 and Type 2 domains are formed at different stages, there is no reason to expect them to be in a strict hierarchical relationship.

7. CONCLUDING POINTS

Our approach involves categorizing phonological rules primarily in terms of the kind of information they are sensitive to, rather than domain size.

Although much remains to be specified, we believe this approach offers a way to answer the questions in §1 and account for patterns that would otherwise be unexplained.