

Tobias Scheer U Nice Sophia Antipolis  
 Pierre Encrevé EPHE  
 Sophie Wauquier U Paris 8

13èmes Rencontres du  
 Réseau Français de Phonologie  
 Bordeaux  
 29 June - 2 July 2015

this handout and some of the references quoted at  
[www.unice.fr/scheer/](http://www.unice.fr/scheer/)

## AUTOSEGMENTAL NEWS FROM H ASPIRÉ AND LIAISON WITHOUT ENCHAÎNEMENT

### 1. The issue

- (1) four questions
- is liaison a uniform phenomenon?
  - is there anything lexicalized at the end of word 1?
  - is liaison managed by autosegmental representations including floating Cs?
  - is liaison without enchaînement (LWE) phonologically relevant?
- (2) answers
- 4 times NO  
 PFC-based work in general and in particular Côté (2008)  
 [there is also PFC-based work that answers NO only 3,5 or 2,5 times.<sup>1</sup>]
  - 4 times YES  
 classical generative and autosegmental analysis: Encrevé (1988)  
 ==> what we set out to show is correct

### 2. Côté's analysis

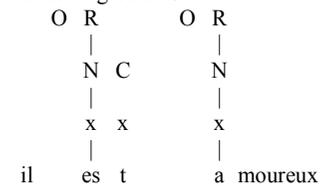
- (3) Côté (2008: 82): liaison consonants may be
- epenthetic  
 default case as in *petit [t] animal* "little animal",
  - a prefix of word 2  
 when it plays a morphological role as e.g. the plural marker *z* in *des petits [iza] animaux* "little animals"
  - suppletive  
 when the preceding vowel is distinct in liaison and non-liaison forms, as in *bon [...ʔna...] ami* "good friend" vs. *bon [...ʔk...] café* "good coffee", in which case there are two allomorphs stored, /bɔ̃/ and /bɔ̃n/.

<sup>1</sup> See Boyé *et al.* (2005) and Eychenne (2011) where liaison consonants are approached in an HPSG perspective: they belong to word 1, but do not float. Rather, the lexical entries of all French words is split into two sub-entries, the root and an "appendix" where the latter contains eventual liaison consonants and may be independently accessed by phonological computation.

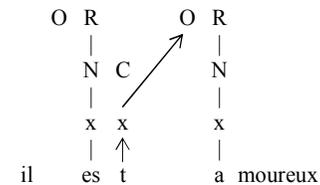
- (4) thus
- non-uniformity  
 liaison is a cover term for a number of distinct phonological processes
  - there is nothing at the end of word 1  
 the option that is excluded is the lexical recording of the liaison consonant at the end of word 1
  - no autosegmentalism needed  
 Côté's (2008: 61) explicit goal is to show that "syllable structure and well-formedness, which are crucial elements of the defective segment analysis, play no role."  
 Her target is the "holy trinity" of French phonology (her term) schwa, liaison and h aspiré, and the instrument of her endeavour regarding the latter two items is the idea that liaison consonants never belong to word 1.
  - anti- and pre-autosegmental analysis  
 h aspiré  
 is encoded by a diacritic (something like [+h aspiré]), which is then accessed by lexically-specific constraints and/or rankings (co-phonologies or indexed constraints).

### 3. Recap: the classical autosegmental analysis of liaison

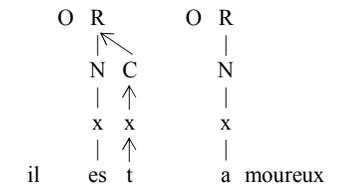
- (5) optional liaison according to Encrevé (1988)
- lexical ingredients



phonological computation  
 b. with enchaînement



c. without enchaînement

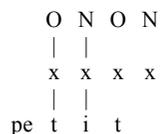


- (6) h aspiré according to Encrevé (1988) and Clements & Keyser (1983)  
 a. *petit être*: obligatory enchainé liaison    b. *petit hêtre*: liaison impossible



**4. Liaison without enchaînement (LWE)**

- (7) recap: liaison without enchaînement  
 a. c'est [...et | ?a...] absolument vrai  
 Passy (1899: 51 note 1)  
 b. j'avais [...ez | ?ɛ...] un rêve  
 V. Giscard d'Estaing, 19-5-1981  
 c. j'ai beaucoup [...up | ?e...] écouté les uns [...ez ɛz|?e...] et les [...ezo...] autres  
 F. Mitterrand 10-3-1988  
 d. il est [...et | ?ɛ...] indispensable...  
 J. Chirac 1-04-2004  
 e. beaucoup d'autres seront [...ɔ̃t | ?a...] avec nous  
 L. Fabius 22-05-2005
- (8) lexical representation of liaison consonants



- (9) consonantal position at the end of word 1  
 a. liaison consonants  
 1. are stored at the end of word 1  
 2. there is a consonantal position at the end of word 1  
 3. the liaison consonant is lexically unassociated to this position: it floats  
 b. LWE  
 1. when LWE occurs, the floating C attaches to this empty C slot at the end of w1  
 2. under liaison with enchaînement, it attaches to the onset of the following word.  
 c. there is also a vocalic position at the end of word 1  
 ==> on which more below.

- (10) what is at stake  
 a. if LWE is phonologically relevant,  
 there must be a floating consonantal position at the end of word 1  
 There  
 1. since the liaison consonant (of whatever lexical origin) is pronounced at the end of word 1,  
 2. and only liaison-inducing words allow for it to be pronounced:  
 beaucoup d'autres seront [...ɔ̃t | ?a...] avec nous  
 vs.  
 quelqu'un sera \* [...at | ?a...] avec nous  
 b. LWE stands in the way of a major analytical result regarding liaison that comes from PFC: the idea that nothing is stored at the end of word 1.  
 Côté (2008: 89f) explicitly acknowledges this fact.  
 c. ==>  
 if nothing ought to be stored at the end of word 1, LWE must not be phonologically relevant.
- (11) anti-LWE arguments from the PFC literature  
 a. "the PFC corpus does not corroborate the phonological status that Encrevé attributes to LWE"  
 ("[I]examen du corpus PFC ne corrobore pas le statut phonologique accordé à la liaison non-enchaînée par P. Encrevé").  
 Durand *et al.* (2011: 114)  
 b. argument #1  
 LWE is numerically marginal (rare)  
 c. argument #2  
 LWE reduces to a spelling effect.
- (12) rarity of LWE  
 a. Mallet (2008: 179ff)  
 130 cases of LWE in the complete PFC corpus (only mainland)  
 = 0,35% of all liaisons realized (totalling obligatory and optional liaisons)  
 b. Laks (2009)  
 explores two corpora regarding low ranking socio-professional groups:  
 1. workers born in the 19<sup>th</sup> century whose pronunciation was studied by Ferdinand Brunot in 1912/13 (Veken 1984)  
 2. suburban teenagers interviewed by Laks (1983) in 1975.  
 3. Laks (2009: 248) reports that LWE is completely absent in these data  
 4. and concludes that "LWE is not a property of ordinary speech"  
 ("le non-enchaînement n'est pas une propriété de la parole ordinaire").  
 c. That much we knew from the pre-PFC literature including Encrevé.

- (13) LWE is a spelling effect
- a. obvious relationship with orthography and extensive training of children in school. Laks (2005a: 117ff), Durand *et al.* (2011: 114f), Durand & Lyche (2008: 50),  
  
"The crucial role of spelling in the acquisition and use of optional liaison [...] accounts simultaneously for the existence of liaison without *enchaînement*, its restriction to optional liaison, and its occurrence in very formal types of speech, read speech in large part."  
Côté (2008: 90, emphasis in original).
  - b. that much we knew,  
but this does not mean that LWE reduces to spelling.
- (14) arguments by Encrevé (1988)  
production: LWE is part of the competence of those who produce it
- a. LWE is regular is equally distributed over speech acts
  - b. never followed by any self-correction
  - c. only occurs in phonologically (before V-initial words) and syntactically (identifying optional liaisons) specified contexts. Hence grammar opens a window for LWE, and this window is never violated.  
==> LWE is not a performance error - it is part of the grammar of the speakers.
- (15) arguments by Encrevé (1988)  
perception: LWE is part of the competence of those who perceive it
- a. since audio-visual media have developed, all natives constantly bathe in an LWE-rich environment.
  - b. speakers who produce LWE are perceived as especially
    - noteworthy
    - legitimate/ important
    - socially high-ranking
  - c. no native of whatever social level has trouble understanding an arbitrary mix of
    - liaison with enchaînement
    - liaison without enchaînement
    - no liaison
 in the same context (=optional liaison) coming from the same speaker in the same pragmatic context.  
 ==> LWE is part of the passive competence of all natives.
- (16) the occurrence of LWE is not random
- a. LWE scales along
    1. socio-professional categories and
    2. type of production
 as expected: there is more LWE
    1. in higher socio-professional groups
    2. when reading aloud than in free oral production

(17) PFC data<sup>2</sup>  
liaisons realized (PFC corpus, mainland France, August 12<sup>th</sup>, 2013)

	liaisons realized (obligatory and optional)	LWE %	
a. total (all types of production and social categories)	14290	119	0,8
b. by socio-professional category			
liberal professionals	694	13	1,9
teachers, medical professions, state employees	1513	14	0,9
civil service senior executives (including University professors and researchers)	628	4	0,6
peasants	655	5	0,8
workers (qualified or unqualified)	390	2	0,5
c. by type of production			
text read aloud	4116	50	1,2
directed discussion	5700	50	0,9
spontaneous speech	4460	19	0,4

## 5. Children produce things that are absent from the stimulus

- (18) LWE: a theatre for the age-old confrontation with empiricist thinking
- a. usage-based approach  
(Bybee 2005), applied to liaison by, among others, Chevrot *et al.* (2013)
    1. children only reproduce what they hear
    2. there is no autonomous phonological activity based on lexical items: all that children do is to store, to concatenate and to repeat (cut and paste) pieces of speech.
    3. constructions resulting from surface-based parsing are stored
    4. this is an instantiation of the regular empiricist philosophy  
nothing can exist in the mind/brain that did not exist in the senses before
    5. prediction  
nothing in the production of children can be absent from the stimulus.
  - b. rationalist alternative  
the production of children is based on
    1. the environmental input
    2. a language faculty that is partly independent of any stimulus
 prediction:  
 items that are absent from the stimulus may well be present in the production of children: they are the result of computation carried out by grammar.

<sup>2</sup> Based on an access of the online PFC corpus (<http://www.projet-pfc.net/moteur.html>) on August 12<sup>th</sup>, 2013, which at that point contained 20 data spots over mainland France representing 209 interviews (hence an average of about 10 speakers per spot). The PFC corpus is coded for liaison and distinguishes liaison with and without enchaînement. However, it does not code the eventual occurrence of schwa or glottal stop with the latter. The PFC corpus distinguishes 18 socio-professional categories, of which five were chosen which presumably include the two end points of the scale.

### 5.1. LWE ex nihilo

- (19) acquisition of LWE: currently entertained scenario:  
LWE absent from the input, therefore absent in children
- a. LWE is restricted to specific (high, journalistic, official) style,
  - b. illiterate pre-school children have no chance to come across it at all.
  - c. LWE thus arises only as a side-effect of children's access to literacy after age six,
  - d. and is concomitant with the acquisition of optional liaison (which appears at this developmental stage).
  - e. Hence there is no ground for children to produce LWE before age six, and they only sporadically recur to LWE later on under the influence of instruction and literacy (Dugua 2006: 328).
- (20) acquisition of LWE: evidence available to date
- a. conforming to this scenario, the empirical record thus far has not identified any LWE before age six.
  - b. this is true for longitudinal studies
    1. the *Sophie* corpus, cited in Chevrot *et al.* (2005, 2009)
    2. cross-sectional studies (e.g. Wauquier-Gravelines & Braud 2005) as well as for
    3. behavioral psycholinguistic tests (Dugua 2006, Nardy 2008, Chevrot *et al.* 2009).
  - c. LWE is observed in L2 literate learners  
Mastromonaco (1999) and Thomas (2004).
    1. Thomas (2004)  
production 48 English natives in their third year of French at University.
    2. all cases of LWE observed have a strong likelihood to originate in spelling. This is rather unsurprising for adult L2 learners and extends to liaison beyond LWE.
    3. example  
pronunciation of *grand ami* "great friend" as [grãdami] instead of [grãtami]:  
underlying /d/ (established by *grande* [grãd] "great, fem.") appears as [t] in liaison, but is always spelt <d>.  
The L2 speakers in question have never heard a single instance of [grãdami] from any French native, but still produce [d], which is the item they see in orthography.
- (21) perception of LWE
- a. no data available to date.
  - b. Focusing on sociolinguistic variation in the acquisition of liaison, Nardy (2008) for example probes grammaticality judgements by children. She contrasts cases where the liaison consonant is realized on word 2 with instances where it is absent. However, the perception of a realized liaison consonant on word 1, i.e. LWE, is not tested.

- (22) LWE ex nihilo
- a. Splendido (2014) documents the existence of LWE before age six and in absence of a graphic input.
  - b. longitudinal study (3,5 to 6 years)  
conducted with 8 illiterate pre-school children
    1. two French L1,
    2. three bilingual Swedish-French (BSF)
    3. three Swedish early L2 French (EFL2)
  - c. none of the 8 children was systematically exposed to written representations of French words or explicitly taught either French or Swedish spelling.
  - d. picture-naming task
  - e. results
    1. one BSF and one EFL2 child produce respectively 8% and 13% of LWE which most of the time is followed by a glottal stop.
    2. productions with LWE occur towards the end of the longitudinal study, i.e. around age six.
    3. these LWE are always produced with the correct consonant, i.e. children never make substitution errors (which are otherwise well documented).  
Splendido (2014: 249)
- (23) discussion
- a. the evidence documented by Splendido suggests that LWE may emerge in absence of any LWE in the input, and independently of spelling.
  - b. unexpected by the empiricist / usage-based approach
  - c. in line with the rationalist approach.  
LWE emerging in children may be the result of a developmental path whereby learners try to make sense of these consonants that are sometimes present, but absent at other times.
- ### 5.2. LWE betrays an intermediate developmental stage
- (24) interpretation of LWE ex nihilo
- a. following Splendido (2014: 248), we believe that the presence of LWE in illiterate pre-school children makes sense as an intermediate step in the developmental path that infants follow when moving towards the adult system.
  - b. recall that the LWE documented in her data were observed on the last recording sessions, i.e. at a stage where the acquisition of liaison was about to be completed (while omissions continued to be produced but substitution errors faded).
- (25) developmental path
- a. stage 1  
common to the constructionist and autosegmental scenario  
Surface-based parsing that identifies the DP as a single unit, i.e. without individualizing the words it contains.



### 6. H aspiré-triggered glottal stop after unpronounced liaison consonants

#### 6.1. Recap: h aspiré

- (30) properties of h aspiré words, part I  
diagnostics for h aspiré

	h-aspiré	C-initial	ordinary V-initial
a. liaison	<b>NO</b> les *[z] housses	<b>NO</b> les *[z] portes	<b>YES</b> les [z] hommes
b. élision	<b>NO</b> la / *l' housse	<b>NO</b> la / *l' porte	<b>YES</b> *le / l'homme
c. suppletion	<b>NO</b> ma / *mon housse	<b>NO</b> ma / *mon porte	<b>YES</b> mon / *ma armoire
d. enchaînement	<b>NO</b> quelle   haine, *quelle_haine <b>YES</b> par_hasard, *par   hasard	<b>NO</b> quel tableau * quel_tableau	<b>YES</b> quel_homme, quel_*  homme

- (31) properties of h aspiré words, part II  
after C-final words, h aspiré may generate a schwa  
Grammont (1914: 124), Schane (1967: 46, 1968: 162), Selkirk (1972: 329f), Dell (1973: 186, 262), Tranel (1981: 286f, 306ff)

	h-aspiré + schwa	ordinary V-initial + schwa
a. after C-final words	<b>YES</b> fem. quelle [ə] housse masc. quel [ə] hêtre	<b>NO</b> fem. quelle *[ə] armoire masc. quel *[ə] homme
b. after V-final words	<b>NO</b> fem. une jolie *[ə] housse la *[ə] housse masc. un joli *[ə] hêtre le *[ə] hêtre	<b>NO</b> fem. une jolie *[ə] armoire la *[ə] armoire masc. un joli *[ə] homme le *[ə] homme

- (32) properties of h aspiré words, part III  
after C-final words, h aspiré may generate a glottal stop  
Dell (1973: 186, 262 note 85), Tranel (1981: 310f), Encrevé (1988: 198ff)

	h-aspiré + [ʔ]	ordinary V-initial + [ʔ]
a. after C-final words	<b>YES</b> fem. quelle [ʔ] housse masc. quel [ʔ] hêtre	<b>NO</b> fem. quelle *[ʔ] armoire masc. quel *[ʔ] homme
b. after V-final words	<b>NO</b> fem. une jolie *[ʔ] housse la *[ʔ] housse masc. un joli *[ʔ] hêtre le *[ʔ] hêtre	<b>NO</b> fem. une jolie *[ʔ] armoire masc. un joli *[ʔ] homme

- (33) either a glottal stop or a schwa – not both

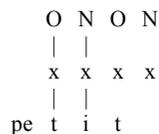
- (33) either a glottal stop or a schwa – not both
- the generation of either schwa or a glottal stop is obligatory when h aspiré occurs in post-consonantal position.  
The literature quoted is explicit on this.
  - glottal stop and schwa cannot co-occur  
*une grosse [...əu...] housse*  
*une grosse [...ʔu...]housse*  
but  
*une grosse \* [...əʔu...] housse*  
Pagliano (2003: 634ff), Côté (2008: 66)

- (34) disclaimer: emphasis
- we are not talking about emphasis.  
All data presented only concern non-emphatic contexts.
  - the glottal stop is a regular exponent of emphasis in French:  
if emphasis is put on a noun, a glottal stop may appear with *any* V-initial word, not just with h aspiré words.  
Freeman (1975), Tranel (1981: 310f), Pagliano (2003: 640ff)
  - Grammont (1914: 144):  
"insistence can apply to an initial syllable beginning with a vowel. Even in this case its major specific characteristic, consonantal strengthening [elsewhere Grammont shows that gemination is also an exponent of emphasis], is observed since the initial vowel is preceded by a glottal stop" (translation ours).
  - Malécot (1975: 52)  
Based on sound recordings of 50 Parisian speakers, Malécot writes that the glottal stop occurs "exclusively before vowels [...], it serves as a stress marker to emphasize a word, phrase or sentence, that is, to call attention (1) to a qualification or distinction that the speaker wishes to make, (2) to a cited word, proper noun or initials, or (3) to a correction made to something he has just said."  
Glottal stops of emphatic origin are also distinct from h aspiré-generated items by the fact that they may occur after vowels: Malécot (1975: 53) quotes for example *de façon à [ʔ] arriver* with emphasis on *arriver*.
  - Hence pronunciations marked as ungrammatical under (32) are only ill-formed in non-emphatic contexts. They are possible in case emphasis lies on the noun.  
This is shown under (35) below (where emphasis is indicated by upper case characters).

- (35) glottal stop is an exponent of emphasis
- |                        | h-aspiré emphatic  | ordinary V-initial emphatic                                       |
|------------------------|--|---|
| a. after C-final words | <b>YES</b><br>fem quelle [ʔ] HOUSSE<br>masc quel [ʔ] HEROS | <b>YES</b><br>fem quelle [ʔ] ARMOIRE<br>masc quel [ʔ] HOMME       |
| b. after V-final words | <b>YES</b><br>une jolie [ʔ] HOUSSE<br>un joli [ʔ] HEROS    | <b>YES</b><br>fem une jolie [ʔ] ARMOIRE<br>masc un joli [ʔ] HOMME |

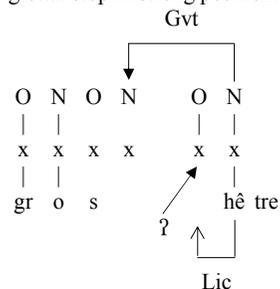


- (43) recall the lexical representation of liaison consonants

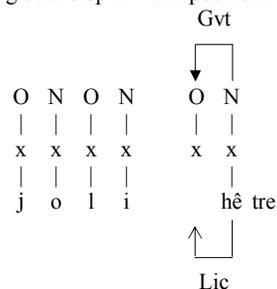


- (44) *gros hêtre* vs. *joli hêtre*

a. *gros* [...oʔε...] hêtre  
glottal stop in strong position: C\_\_V



b. *joli* \* [...iʔε...] hêtre  
glottal stop in weak position: V\_\_V



- (45) converging evidence

- a. LWE  
=> there is a consonantal position at the end of word 1
- b. h aspiré  
=> there is a consonantal position at the end of word 1

## 7. H aspiré and domains of phonological computation

### 7.1. Why there is no *gros* \* [o ə] *hêtre*: hiatus avoidance

- (46) no schwa after pronounced liaison consonants

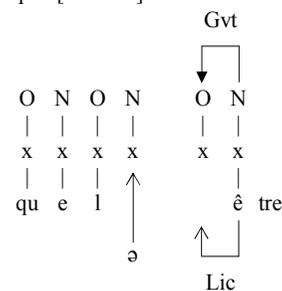
a. after pronounced consonants, schwa and glottal stop are in free variation  
*grosse housse* can come out as  
*grosse* [...sʔu...] *housse* or  
*grosse* [...səu...] *housse*.

b. we expect the same free variation after unpronounced liaison consonants

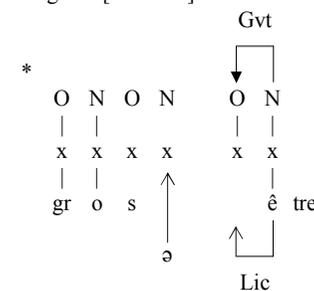
1. a glottal stop may be generated
2. but no schwa:  
*un gros* \* [...oəε...] *hêtre*  
is not even remotely possible.
3. Why?

- (47) *quel hêtre* vs. *gros hêtre*

a. *quel* [...ləε...] *hêtre*



b. *gros* \* [...oəε...] *hêtre*



- (48) only difference

associated vs. floating status of the last consonant of word 1

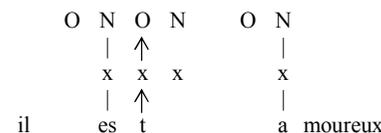
- (49) consider another question

- a. that arises if, as we contend, floating consonants indeed possess their own onset lexically at the end of word 1:
- b. why is there no LWE before consonant-initial words?
  1. speakers may decide  
under sociological motivation to associate the floating consonant to the empty onset at the end of word 1: this is LWE.  
*il est* [t] *amoureux*
  2. why are they not free to decide  
to do so when the following word is C-initial?  
*il est* \*[t] *grand*?

- (50) why is there no LWE before consonants?

a. *il est* [t] *amoureux*

b. *il est* \*[t] *grand*



- (51) proposal

both questions have the same answer:

#### hiatus avoidance

- a. Hiatus avoidance has always played a role in the analysis of liaison.
- b. This is true for pre-20<sup>th</sup> century approaches (Morin 2005: 8 provides an overview),
- c. for the classical linear and autosegmental literature (see the survey in Encrevé 1988: 79ff), his own OCP-based analysis 167f)
- d. and for OT-based analyses (e.g. Perlmutter 1996, Steriade 1999, Tranel 1998, 2000: 45ff).<sup>3</sup>

<sup>3</sup> Hiatus-driven analyses diverge in their workings, though: while Steriade (1999) argues for hiatus repairs through the insertion of individual consonants of feminine forms (rather than of the entire feminine lexeme),

- (52) no LWE before consonants
  - a. il est [t] amoureux (50)a  
hiatus avoidance is the motor for attaching the liaison consonant.
  - b. il est \*[t] grand (50)b  
this motivation is lacking, which is why there is no liaison in this context.
- (53) no schwa after unpronounced Cs
  - a. **\*gr[œ] hêtre**  
schwa insertion creates a hiatus  
gros [...œε...] hêtre
  - b. **quel [ə] hêtre**  
no hiatus is produced after pronounced final Cs

### 7.2. H aspiré may set itself off

- (54) interesting observation
  - a. hiatus ≠ hiatus
  - b. **\*gr[œ] hêtre** vs. **grosse [...səu...] housse**  

*[œ    ε]	[ə    u]
*VV # hV	V # V
  - c. generalization  
surface hiatus across the h aspiré word boundary is no hiatus for phonology.
    - 1. phonology is sensitive  
to word 1-internal hiatus: **\*gr[œ]**
    - 2. phonology is insensitive  
to hiatus whose first vowel belongs to word 1 and whose second vowel belongs to the h aspiré-initial word 2
    - 3. **\*gr[œ] hêtre**  
o "sees" schwa  
but  
schwa does not "see" ε
    - 4. **\*grosse [ə] housse**  
schwa does not "see" u
- (55) h aspiré sets itself off
  - a. ==> **h aspiré blocks intervocalic communication**  
over a word boundary that is otherwise permeable.
  - b. Morin (1974: 87f) and Schane (1978a,b) propose that h aspiré words are vowel-initial and bear a syllable boundary to the left of h aspiré in the lexicon. This syllable boundary is hard wired, i.e. cannot be altered during phonological computation, so that the initial vowel of h aspiré words will always be syllable-initial (see also Tranel 1979 on this analysis).
  - c. Cornulier (1978) argues that h aspiré induces a "separation" and is marked for this property in the lexicon.

---

Bermúdez-Otero (Ms) upholds the traditional perspective on suppletion where only entire lexemes can be involved (otherwise forms like *\*nouvol ami* (for intended *nouvel ami*) are produced).

- (55) h aspiré sets itself off
  - d. Côté (2008: 91) discusses the autonomy of h aspiré with respect to the preceding word.
- (56) take-home message
  - a. **h aspiré introduces a domain boundary**
  - b. in the sense of  
cycles, phases etc.
  - c. interesting pattern  
since domain boundaries are usually an exponent of morpho-syntactic structure.  
Here it comes as an idiosyncratic property of lexical items.  
==> piece-driven vs. node-drive chunking (Scheer 2011: §765)

### 8. Cases where h aspiré does not behave like a consonant

- (57) h aspiré
  - a. classical description  
h aspiré-initial words are phonetically vowel-initial, but behave as if they were consonant-initial.
  - b. There are two phenomena that do not follow this pattern, though  
Dell (1973: 262), Cornulier (1981: 206ff), Tranel (1981: 297ff)
  - c. Côté (2008: 66f) insists on the importance of this asymmetry for the analysis of h aspiré.
- (58) when h aspiré does not behave like a consonant
 

	h-aspiré	C-initial
a. word-final schwa drop	<b>NO</b> c[ə] / *c' hêtre	<b>YES</b> c[ə] / c' gâteau
b. post-C schwa epenthesis	<b>YES</b> quel [...ləε...] hêtre	<b>NO</b> quel [...ləm...] mur <sup>4</sup>

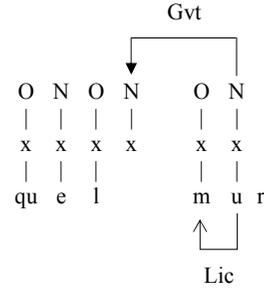
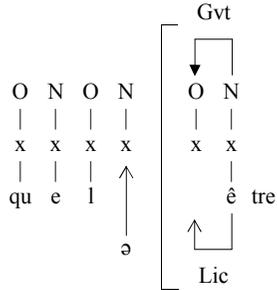
#### 8.1. Post-C schwa epenthesis

- (59) post-C schwa epenthesis
  - a. schwa epenthesis is a consequence of the domain boundary introduced by h aspiré:  
the FEN of word 1 under (60)a is ungoverned and therefore subject to epenthesis.
  - b. the absence of the domain boundary under (60)b enforces regular communication between the two words. Since empty nuclei call for government and nothing prevents the first vowel of the second word to reach that nucleus, government is established and there is no reason for epenthesis.

---

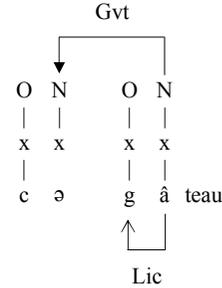
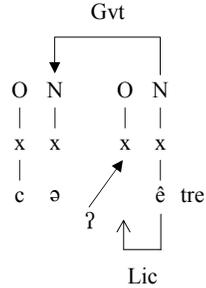
<sup>4</sup> A number of Southern dialects may generate a schwa in this position, see Durand *et al.* (1987). The pattern thus only holds for other varieties.

- (60) why there is no schwa epenthesis after regular consonants  
 a. h aspiré: extra domain creates schwa  
 quel [...ləɛ...] hêtre  
 b. regular consonant: no extra domain  
 quel [...ləm...] mur



**8.2. Word-final schwa drop**

- (61) word-final schwa before h aspiré  
 a. h aspiré: creation of a hiatus  
 ce / \*c' hêtre  
 b. regular consonant: no hiatus created  
 ce / c' gâteau



- (62) observation  
 a. before h aspiré  
 when schwa is dropped, a hiatus is created  
 b. before regular consonants  
 when schwa is dropped, no hiatus is created

- (63) prediction  
 \*əV  
 in French

- (64) schwa in hiatus  
 a. how does schwa behave in this position?  
 b. lack of evidence:  
 schwa never occurs in hiatus in monomorphemic strings

- (64) schwa in hiatus  
 c. one single exception:  
*dehors* [dəɔʁ] "outside", which is discounted in the literature as *de-hors* (Dell 1973: 262, Cornulier 1981: 214). *Hors* is an autonomous word meaning "outside, except", and it bears an h aspiré. This is then the reason why, on this analysis, schwa cannot drop: [dəɔʁ] is not a possible pronunciation for *dehors*, its only reading is *(il) dort* "(he) sleeps".  
 d. in external sandhi (i.e. across word boundaries), schwa-vowel sequences arise underlyingly, but are systematically eliminated by elision (/le ami/ → *l'ami*, /je aime/ → *j'aime*) and suppletion (/ce ami/ → *cet ami*).  
 e. schwa before h aspiré  
 is the only case in French where a word-final schwa is followed by a vowel, and there seems to be no means to inspect its behaviour independently of this pattern.  
 f. ==>  
 except for a situation in internal sandhi (i.e. across a morpheme boundary):  
 the prefix *re-* with iterative meaning "do X again" productively attaches to verbs of whatever kind.

(65) re-V

re-a	re-allumer	re-e	re-écouter	re-i	re-inviter	re-o	re-offenser
	re-appeler		re-éditer		re-importer		re-organiser
	re-arbitrer		re-effacer		re-inculper		re-ouvrir
	re-abandonner		re-embêter		re-imiter		re-orienter
re-u	re-urbaniser	re-ou	re-outrir	re-eu	re-euphoriser		
	re-unifier		re-ouvrir		re-oeuvrer		
	re-uniformiser						

- (66) prediction appears to be correct  
 a. schwa happily drops before C-initial stems  
*r(e)-manger, r(e)-faire, r(e)-bouger*  
 b. but is agrammatical before V-initial stems  
 in both enchainé (*r<sub>c</sub>arbitrer*) and non-enchainé versions (*r<sup>l</sup>-arbitrer*)

**9. Conclusion**

- (67) liaison-inducing words bear a consonantal constituent after the last stable vowel arguments  
 a. LWE  
 which needs to be taken seriously because of  
 1. recent acquisition data  
 2. classical arguments  
 b. h aspiré  
 presence of a glottal stop after unpronounced liaison consonants
- (68) liaison-inducing words bear a vocalic position after the last stable vowel h aspiré  
 the schwa generated by h aspiré is hosted by this position

(69) lexical representation of liaison-inducing words

O	N	O	N
x	x	x	x
pe	t	i	t

(70) unpronounced liaison consonant:

invariable behaviour of liaison-inducing words before h aspiré

- a. prenominal adjectives            un petit [...i?ε...] hêtre
- b. plural marker                        des petits [...i?o...] hêtres
- c. items with variable vowels        un bon [...ɔ?ε...] hêtre

(71) trouble

- a. for analyses where liaison consonants have an origin different from the lexical recording
- b. if Côté's analysis is correct, the liaison consonant is necessarily absent from word 1 when unpronounced
- c. but (70) shows that it is present

(72) or rather...

- a. what (70) shows is that the *constituent* in which the liaison consonant is realized in case of LWE is present at the end of word 1
- b. our results do not speak to the lexical origin of the melody of the liaison consonant.

(73) four answers

- |   |   |                                 |     |
|---|---|---------------------------------|-----|
| a. is liaison a uniform phenomenon?   | } | yes: consonantal position in w1 |     |
| b. is there anything lexicalized at the end of word 1?                        |   |                                 |     |
| c. is liaison managed by autosegmental representations including floating Cs? |   |                                 | yes |
| d. is liaison without enchaînement (LWE) phonologically relevant?             |   |                                 | yes |

References

Bermúdez-Otero, Ricardo Ms. In defence of underlying representations and cyclic containment: French adjectival liaison and Romanian morphological palatalization.

Boyé, Gilles, Olivier Bonami & Jesse Tseng 2005. Sur la grammaire des consonnes latentes. *Langages* 158: 89-100.

Bybee, Joan 2005. La liaison: effets de fréquence et constructions. *Langages* 125: 24-37.

Chevrot, J.-P., C. Dugua, M. Harnois-Delpiano, A. Siccardi & E. Spinelli 2013. Liaison acquisition: Debates, critical issues, future research. *Language Sciences* 39: 83-94.

Chevrot, Jean-Pierre, Céline Dugua & Michel Fayol 2005. Liaison et formation des mots français: un scénario développemental. *Langages* 125: 38-52.

Chevrot, Jean-Pierre, Céline Dugua & Michel Fayol 2009. Liaison acquisition, word segmentation and construction in French: a usage-based account. *Journal of Experimental Child Psychology* 102: 342-250.

Clements, George & Samuel Keyser 1983. *CV Phonology. A Generative Theory of the Syllable*. Cambridge, Mass.: MIT Press.

Cornulier, Benoît de 1978. Syllables et suites de phonèmes en phonologie du français. *Etudes de phonologie française*, edited by Benoît de Cornulier & François Dell, 31-66. Paris: CNRS éditions.

Cornulier, Benoît de 1981. H-aspiré et la syllabation: expressions disjonctives. *Phonology in the 1980's*, edited by Didier Goyvaerts, 183-230. Ghent: Story-Scientia.

Côté, Marie-Hélène 2005. Le statut lexical des consonnes de liaison. *Langages* 125: 66-78.

Côté, Marie-Hélène 2008. Empty elements in schwa, liaison and h aspiré: the French Holy Trinity revisited. *Sounds of Silence: Empty Elements in Syntax and Phonology*, edited by Jutta Hartmann, Veronika Hegedüs & Henk van Riemsdijk, 61-103. Amsterdam: Elsevier. WEB.

de Lacy, Paul 2007. Themes in Phonology. *The Cambridge Handbook of Phonology*, edited by Paul de Lacy, 5-30. Cambridge: CUP.

Dell, François 1973. *Les règles et les sons*. 2nd edition 1985 Paris: Hermann.

Dugua, Céline 2006. Liaison, segmentation lexicale et schémas syntaxiques entre 2 et 6 ans : un modèle développemental basé sur l'usage. Ph.D dissertation, Université Grenoble III.

Durand, Jacques, Bernard Laks, Basilio Calderone & Atanas Tchobanov 2011. Que savons-nous de la liaison aujourd'hui? *Langue Française* 169: 103-135.

Durand, Jacques & Chantal Lyche 2008. French liaison in the light of corpus data. *Journal of French Language Studies* 18: 33-66.

Durand, Jacques, Catherine Slater & Hilary Wise 1987. Observations on schwa in Southern French. *Linguistics* 25: 983-1004.

Encrevé, Pierre 1988. La liaison avec et sans enchaînement: phonologie tridimensionnelle et usages du français. Paris: Seuil.

Encrevé, Pierre & Tobias Scheer 2005. Autosegmental association is not automatic. Paper presented at the 13th Manchester Phonology Meeting, Manchester 26-28 May. WEB.

Eychenne, Julien 2011. La liaison en français et la théorie de l'optimalité. *Langue Française* 169: 79-101.

Freeman, M. 1975. Is French phonology abstract or just elsewhere: boundary phenomena and 'h-aspiré' = [ʔ], not #? ! Ms, Harvard University.

Gabriel, Christoph & Trudel Meisenburg 2005. Silent onsets? An optimality-theoretic approach to French h aspiré words. Paper presented at OCP2, Tromsø 20-22 January 2005. Handout available on ROA.

Grammont, Maurice 1914. *Traité Pratique de Prononciation Française*. Paris: Delgrave.

Laks, Bernard 1983. Langage et pratiques sociales. *Étude sociolinguistique d'un groupe d'adolescents. Actes de la recherche en sciences sociales* 46: 73-97.

Laks, Bernard 2005. La liaison et l'illusion. *Langages* 158: 101-126.

Laks, Bernard 2009. Dynamiques de la liaison en français. *Le français d'un continent à l'autre*, edited by Luc Baronian & France Martineau, 237-267. Québec: Presses de l'Université Laval.

Malécot, André 1975. The golottal stop in French. *Phonetica* 31: 51-63.

Mallet, Géraldine 2008. La liaison en français : descriptions et analyses dans le corpus PFC. Ph.D dissertation, Université Paris 10.

Mastromonaco, Silvana Maria 1999. Liaison in French as a Second Language. Ph.D dissertation, University of Toronto.

Morin, Yves-Charles 1974. Règles phonologiques à domaine indéterminé: chute de cheva en français. *Cahier de Linguistique* 4: 69-88.

- Morin, Yves-Charles 2005. La liaison relève-t-elle d'une tendance à éviter les hiatus? *Langages* 158: 8-23.
- Nardy, Aurélie 2008. Acquisition des variables sociolinguistiques entre 2 et 6 ans : facteurs sociologiques et influences des interactions au sein du réseau social. Ph.D dissertation, Université de Grenoble 3.
- Pagliano, Claudine 2003. L'épenthèse consonantique en français. Ce que la syntaxe, la sémantique et la morphologie peuvent faire à la phonologie. Ph.D dissertation, Université de Nice.
- Passy 1899. *Les sons du français*. Paris: Firmin-Didot.
- Perlmutter, David 1996. Interfaces: Explanations of Allomorphy and the Architecture of Grammars. *Morphology and its Relation to Syntax and Phonology*, edited by S. Lapointe, D. Brentari & P. Farrell, 307-338. Stanford: CSLI Publications.
- Ruvoletto, Samantha 2014. French Liaison: the Double-Floating Representation in the first Grade. Paper presented at the Manchester Phonology Meeting, Manchester 29-31 May.
- Schane, Sanford 1967. L'élision et la liaison en français. *Langages* 8: 37-59.
- Schane, Sanford 1968. *French Phonology and Morphology*. Cambridge, Mass.: MIT Press.
- Schane, Sanford 1978. L'emploi des frontières de mot en français. *Etudes de phonologie française*, edited by Benoît de Cornulier & François Dell, 133-147. Paris: Editions du CNRS.
- Schane, Sanford 1978. Syllable versus word boundary in French. *Contemporary studies in Romance linguistics*, edited by M. Suñer, 302-315. Washington: Georgetown University Press.
- Scheer, Tobias 2010. What OT is, and what it is not. Review of *The Cambridge Handbook of Phonology*, ed. by Paul de Lacy. *Journal of Linguistics* 46: 193-218. WEB.
- Scheer, Tobias 2011. *A Guide to Morphosyntax-Phonology Interface Theories. How Extra-Phonological Information is Treated in Phonology since Trubetzkoy's Grenzsignale*. Berlin: Mouton de Gruyter.
- Selkirk, Elisabeth 1972. *The phrase phonology of English and French*. Ph.D. dissertation MIT, published 1980 by Garland Press.
- Splendido, Frida 2014. Le développement d'aspects phonético-phonologiques du français chez des enfants bilingues simultanés et successifs, le VOT et la liaison dans une étude de cas multiples (*Etudes romanes de Lund* 92). Lund: Lunds Universitet.
- Steriade, Donca 1999. Lexical conservatism in French adjectival liaison. *Formal perspectives on Romance linguistics*, edited by Jean-Marc Authier, Barbara E. Bullock & Lisa A. Reed, 243-270. Amsterdam: Benjamins.
- Thomas, Alain 2004. Phonetic norm versus usage in advanced French as a second language. *International Review of Applied Linguistics* 42: 365-382.
- Tranel, Bernard 1979. Review of *Etudes de Phonologie Française* (eds. B. de Cornulier and F. Dell). *Language* 56: 655-661.
- Tranel, Bernard 1981. *Concreteness in Generative Phonology. Evidence from French*. Berkeley: University of California Press.
- Tranel, Bernard 1998. Suppletion and OT: On the Issue of Syntax/Phonology Interaction. *Proceedings of the West Coast Conference on Formal Linguistics* 16: 415-429.
- Tranel, Bernard 2000. Aspects de la phonologie du français et la théorie de l'optimalité. *Langue française* 126: 39-72.
- Veken, Cyril 1984. Le phonographe du terrain: la mission Brunot-Bruneau dans les Ardennes en 1912. *Recherches sur le français parlé* 6: 45-71.
- Wauquier-Gravelines, Sophie & Virginie Braud 2005. Proto-déterminant et acquisition de la liaison obligatoire en français. *Langages* 158: 53-65.

- Wauquier, Sophie 2009. Acquisition de la liaison en L1 et L2 : stratégies phonologiques ou lexicales? *Aile...Lia* 2: 93-130.