

## FRENCH CONTRACTIONS

In DM Vocabulary Items can only be inserted at terminal nodes. So, what should one do with contractions? We will compare two proposals regarding French contractions (preposition + definite article): Embick (2010), and Svenonius (2012).

In the singular, the article surfaces as *le* before a consonant-initial masculine, and as *la* before a consonant-initial feminine; before a vowel masculine and feminine surface as *l'*. In the plural, there is no gender distinction, and the plural systematically surfaces as *les*.

### (1) French definite article

	___ / C	___ / V
MASC	<b>le</b> chat 'the cat'	<b>l'</b> arbre (*le arbre) 'the tree'
FEM	<b>la</b> maison 'the house'	<b>l'</b> école (*la école) 'the school'
PL	<b>les</b> chats 'the cats', <b>les</b> arbres 'the trees', <b>les</b> maisons 'the houses', <b>les</b> écoles 'the schools'	

The prepositions *de* 'of, from' and *à* 'at, to' and the definite article surface as a portmanteau form in certain contexts; in other contexts, preposition and determiner have a separate, transparent form.

### (2) P (*de. à*) + D in French

	NO CONTRACTION	CONTRACTION
<i>de</i> + P	de l'arbre (*du arbre) de l'école de la maison	[dy] du chat (*de le chat) [de(z)] des chats (*de le chat) des maisons (*de les maisons) des arbres (*de les arbres)
<i>à</i> + P	à l'arbre (*au arbre) à l'école à la maison	[o(z)] au chat (à le chat) aux chats (à les chats) aux maisons (à les maisons) aux arbres (à les arbres) aux écoles (à les écoles)

Briefly put, contractions appear in the following cases:

- (3) a. *du* [dy]: de + le  
       *des* [de(z)]: de + les  
       b. *au* [o]: à + le  
       *aux* [o(z)]: à + les

Contractions do not take place when

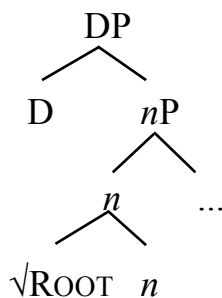
- (4) a. the determiner is specified as [+FEMININE] (e.g. *à la maison*, *à l'école*) or  
       b. "elision" is possible (e.g. *à l'arbre*, *à l'école*)

Especially for the case of *au* [o], the question arises as to what this segment is realizing, the preposition, the determiner, or both. Given that Vocabulary Items can only target terminals, Vocabulary Items like *au(x)* cannot be realizing both the preposition and the definite article. Fusion cannot be resorted to because the phenomenon is partially conditioned by phonological information (the segment, vowel or consonant, adjacent to the determiner).

The topic of contractions, in French and other Romance languages, has been addressed, among others, in Zwicky (1987), Napoli & Nevis (1987), Mascaró (1996), Embick (2007), (2010), Svenonius (2012). Here I will concentrate on the DM proposal in Embick (2010) and I will compare it to Svenonius (2012).

### Embick's DM tentative analysis

- (5) Initial structure for a DP (Embick 2010: 89, (37))



At PF terminals are concatenated; that is, adjacency relations are established (concatenation marked with the diacritic  $\frown$ ):

- (6) Result of D concatenation (Embick 2010: 89, (38))

$D \frown [{}_n \sqrt{\text{ROOT}} n]$

After concatenation has taken place, an Article Cliticization rule can apply if the noun (or other adjacent elements, like an Adjective) starts with a vowel.<sup>1</sup>

- (7) Article cliticization (Embick 2010: 88, (35a))  
 $D[\text{def}] \widehat{\ } X \rightarrow [D[\text{def}][X]], X \text{ V-initial}$

Since X must be vowel-initial for Article cliticization to apply this means that vocabulary insertion must already have applied to X, and X can be a noun, but also an adjective, for instance, and this element can have a complex internal morphosyntactic structure (like *anticolonialisme* 'anticolonialism'), etc.

The application of this rule will give as a result sequences like *l'arbre* after other operations have applied. Schematic derivation of *le chat* and *l'arbre*:

(8)	<i>le chat</i>	<i>l'arbre</i>
Concatenation	$D \widehat{\ } [_n \sqrt{\text{ROOT}} n]$	$D \widehat{\ } [_n \sqrt{\text{ROOT}} n]$
VI of the noun	$D \widehat{\ } [_n \text{ chat}]$	$D \widehat{\ } [_n \text{ arbre}]$
Article Cliticization	n.a.	$[D [_n \text{ arbre}]]$
Vocabulary Ins.	<i>le</i>	<i>le</i>
Other changes	n.a.	<i>l'</i>

Embick focuses on one of the possible scenarios for the cases where the article is preceded by a preposition, namely that P is not a cyclic node. This means that D can show sensitivity to P, which is the case (he also considers briefly the possibility that P is a cyclic node, which would imply that the DP would be spelled out independently of the preposition).

A rule of P-D Affixation causes P and D to become a complex head:

- (9) P-D Affixation (Embick 2010: 88, (35b))<sup>2</sup>  
 $P^+ \widehat{\ } D[\text{def}]^+ \rightarrow [P^+ [D^+]]$

P-D Affixation cannot apply to cases where Article Cliticization has applied.

He suggests Vocabulary Items like the following:

- (10) Allomorphs for the masculine definite article (Embick 2010: 91, (42), (44))<sup>3</sup>  
 a.  $D[\text{def, masc}] \leftrightarrow e / P^+ \oplus \_\_\_$  (alternatively:  $D[\text{def, masc}] \leftrightarrow u / P^+ \oplus \_\_\_$ )  
 b.  $D[\text{def, masc}] \leftrightarrow le$

<sup>1</sup> Article Cliticization would actually be a more general local dislocation rule, applying not only to articles.

<sup>2</sup> The diacritic '+' is a lexical mark that identifies the specific Ds and Ps that undergo the rule.

<sup>3</sup> The diacritic '⊕' is a shorthand for M(orphological)-Word internal concatenation.

For sequences like *de l'arbre* (10a) cannot apply, because Article Cliticization had applied first blocking P-D Affixation; P is in its original syntactic position. Presumably a Readjustment rule (or some phonological rule) will delete the final vowel of the morph *le* before a vowel.

The more specific Vocabulary Item (10a) will apply only to the cases where P-D Affixation has applied first. After the insertion of the prepositions *d(e)* and *à*, "the (morpho)phonology must operate to produce the effects in (43) [(11)]:"

- (11) (Morpho)phonological effects (Embick 2010: 94, (43))
- a.  $d(e)-e \rightarrow du$  (alternatively:  $d(e)-u \rightarrow du$ )
  - b.  $d(e)-e-s \rightarrow des$  (alternatively:  $d(e)-u-s \rightarrow des$ )
  - c.  $\grave{a}-e \rightarrow au$  (/o/)
  - d.  $\grave{a}-e-s \rightarrow aux$  (/oz/)

Embick (2010) does not specify the mechanisms that would lead to these (morpho)phonological effects.

Let's see step by step the derivations of *au chat* and *à l'arbre*.

(12)	a. <i>au chat</i>	b. <i>à l'arbre</i>
Concatenation	$P \widehat{D} \widehat{[}_n \sqrt{\text{ROOT}} n]$	$P \widehat{D} \widehat{[}_n \sqrt{\text{ROOT}} n]$
VI of the noun	$P \widehat{D} \widehat{[}_n \text{chat}]$	$P \widehat{D} \widehat{[}_n \text{arbre}]$
Article Cliticization	-----	$P \widehat{[D [}_n \text{arbre}]}$
P-D Affixation	$[P [D \widehat{[}_n \text{chat}]]]$	-----
Vocabulary Ins.	$\grave{a} e$	$\grave{a} le$
Other changes	[o]	$l'$

Some drawbacks:

- On the morphophonological side, it is not obvious at all how the effects in (11) could be obtained:

- For (11b) ( $d(e)-e-s \rightarrow des$ ) a phonological fusion rule could be posited
- For (11a) ( $d(e)-e \rightarrow du$ ) no natural phonological rule could account for the presence of the rounded vowel

With the alternative version ((11b)  $d(e)-u-s \rightarrow des$ , and (11a)  $d(e)-u \rightarrow du$ ) we would need a rule deleting the rounded vowel in the singular and the front vowel in the plural.

- For (11c, d) ( $\grave{a}-e \rightarrow au$  (/o/) in the singular and in the plural) it would again be difficult to justify the change to a rounded vowel, when the feature is not present in the input.

- Article Cliticization contains syntactic and phonological information. One could imagine, for a different language, an identical rule which applied only before consonants ( $D[\text{def}] \widehat{X} \rightarrow [D[\text{def}][X]]$ ,  $X$  C-initial), but it seems rather unlikely that a language with such a rule exists.

- Embick (2010) concludes that assuming a non-cyclic analysis of PPs (at least for prepositions like *à* or *de*) has advantages over a cyclic analysis, but in the non-cyclic analysis he also has to extrinsically order Article cliticization before P-D Affixation, although this ordering reflects a cyclic procedure (a rule that affects D precedes a rule that also involves P, higher in the syntactic structure).

### One exponent for two nodes: Svenonius (2012)

Svenonius (2012) suggests an analysis, compatible with some basic properties of DM, without resorting to fusion or cliticization operations. A single vocabulary item can realize two distinct positions, here P and D (an idea that has been suggested in previous work; see, e.g. Zwicky 1987 or Mascaró 1996).

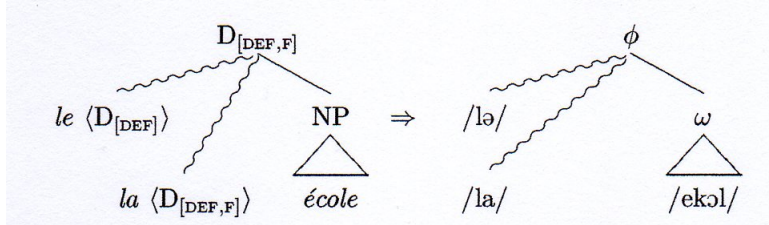
Assumptions and claims:

- A. Late insertion, as in DM.
- B. Cyclic Spell-out: the domain of spell-out is the phase. He follows Marantz (2007) in assuming that the noun contains a phase head  $n$ .
- C. Spans: a span is a complement sequence of heads, normally in a single extended projection. P and D in the French examples we are considering constitute a span.
- D. Strict separation between syntax and phonology (Pullum & Zwicky 1988); only the phonology has access to phonological information (he rejects the possibility of having rules like Article Cliticization). Spell-out proceeds in two steps:
  - L-Match: associates syntactic structures with the syntactic features contained in lexical entries (pairings of syntactic features and phonological features).
  - Insert: the phonological content of lexical entries is arranged into prosodic structure.

(13) Lexical entries for the definite article (Svenonius 2012: (4))

- a. *le*  $\langle D_{+DEF, -PL} \rangle \Leftrightarrow /l\emptyset/$   
 b. *la*  $\langle D_{+DEF, +F -PL} \rangle \Leftrightarrow /la/$   
 c. *les*  $\langle D_{+DEF, +PL} \rangle \Leftrightarrow /le(z)/$

(14) a. L-Match                      b. Insert<sup>4</sup>



Under standard assumptions in DM, *le* and *la* cannot both be selected; only *la* would be because, by the Elsewhere Condition, only the more specific exponent can be selected, blocking the less specific one. For Svenonius (2012) both *le*, underspecified for gender, and *la*, specified for gender, are compatible with the features present in D; so, both of them are inserted and the decision is left to the phonology, as in the cases that were considered earlier.

In the phonology, a set of ranked constraints determines the final form of the sequence: *l'école*.

(15) *L'école* (Svenonius 2012: (10))

/\{l\emptyset, la\} ek\emptyset/	ONS	PARSE-V	*\emptyset
a. $\Rightarrow$ le.k\emptysetl		*	
b. l\emptyset.e.k\emptysetl	*!		*
c. la.e.k\emptysetl	*!		

(16) Lexical entries for the prepositions *de* and *à*

- a. *de*  $\langle P_{[REL]} \rangle \Leftrightarrow /d\emptyset/$   
 b. *à*  $\langle P_{[LOC]} \rangle \Leftrightarrow /a/$

There are also contracted forms that correspond to two terminal nodes, P and D:

<sup>4</sup> Squiggly lines represent lexical relations, while straight lines represent structural relations.

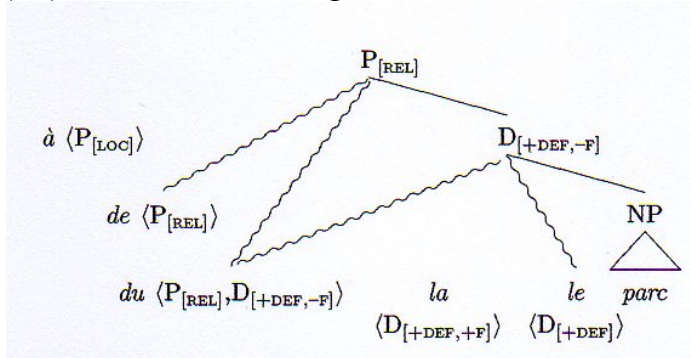
(17) Lexical entries for the contracted forms

- a.  $au < P_{[LOC]}, D_{[+DEF, -F, -PL]} > \Leftrightarrow /o/$
- b.  $du < P_{[REL]}, D_{[+DEF, -F, -PL]} > \Leftrightarrow /dy/$

How are forms like *du parc* and *de l'hôpital* derived?

L-Match provides two possible associations, one for the portmanteau ( $< P_{[REL]}, D_{[+DEF, -F, -PL]} >$ ) and the other one for the independent items  $< P_{[REL]} >$  and  $< D_{+DEF, -PL} >$ , as (18) illustrates.

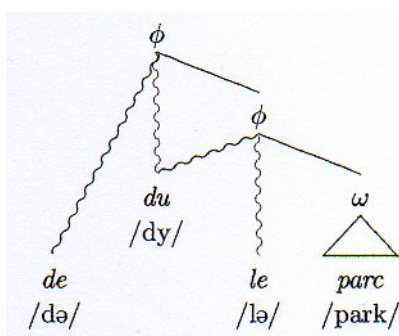
(18) L-Match for *du parc* (Svenonius 2012 (23))



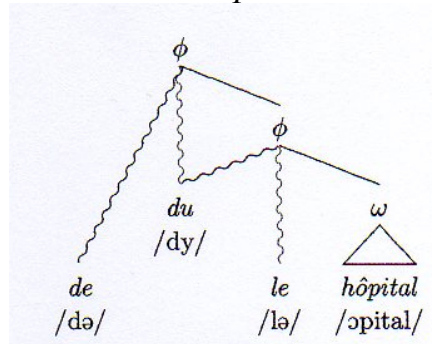
The operation Insert maps the syntactic structure into prosodic structure and inserts the phonological information of each lexical entry. The input to phonological evaluation is as shown in (19).

(19) Insert (Svenonius 2012, part of (24) and (25))

a. *du parc*

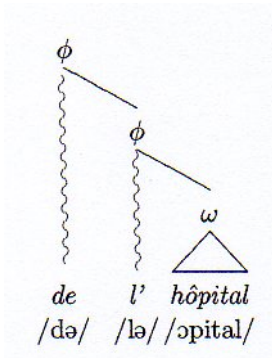


b. *de l'hôpital*



In the case of *de l'hôpital* syllabic well-formedness constraints will rule out an output  $*du\ h\acute{o}pital$ ; the prosodic structure of the winning candidate in (21), *de l'hôpital*, is as shown in (20).

(20)

(21) *de l'hôpital* (Svenonius 2012: ((27), adapted)

/ {də lə, dy} ɔpital/	ONS	NO-CODA	PARSE-V	* <sub>∅</sub>
a. dy.ɔ.pi.tal	*!	*		
b. də.lə.ɔ.pi.tal	*!	*		**
c.  də.lə.pi.tal		*	*	*

In the case of *du parc*, Svenonius attributes the selection of the contracted form over a candidate with separate exponents for the preposition and the determiner (*\*de le parc*) to the idea that the contracted forms is associated with a poorer prosodic structure: only one item *du* is associated to  $\emptyset$ ; in *\*de le parc* each exponent generates prosodic structure. *\*de le parc* violates more times the constraint \*STRUC(TURE) than *du parc*.

(22) *du parc* (Svenonius 2012: ((26))

/ {də lə, dy} park/	ONS	NO-CODA	*STRUC	PARSE-V	* <sub>∅</sub>
a.  dy.park		*	**		
b. də.lə.park		*	***		**!
c. dəl.park		**!	***	*	*

Some drawbacks and open questions (leaving aside the idea that phonology does not have access to syntactic information, not crucial to the account):

- In this proposal two exponents of the definite article with different morphosyntactic feature specifications are simultaneously inserted, as was shown in (14):

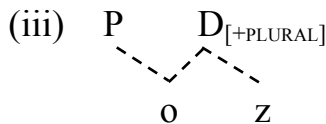
Syntactic node:  $D_{[+DEF, +FEM]}$

Exponents inserted (L-Match): *le*  $\langle D_{[+DEF]} \rangle$  AND *la*  $\langle D_{[+DEF, +F]} \rangle$



This type of multiple insertion obeys neither the Subset Principle (Halle 1997) nor the Superset Principle (Starke 2005, Caha 2009); either one predicts the insertion of a single exponent. Allowing it would predict many more cases of phonologically-driven selection of exponents than are attested.

- Plurals are avoided in the paper. But for a form like *aux* [oz] *arbres*, [o] would be realizing P + D, and [z] would presumably be realizing a feature on D, as is schematically shown in (iii):



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