Syllable structure and prosodic words in Early Old French

THOMAS M. RAINSFORD
University of Stuttgart

Abstract

This paper presents a comprehensive analysis of the phonotactics of syllable rhymes based on all unique tokens in two Early Old French texts. Based on the data from this single, conservative variety, I develop Jacobs' (1994) proposal that the Old French stress rule is underlyingly trochaic and that word-final stress is caused by the presence of an empty-headed final syllable. I argue that this analysis can only be valid while words with final stress systematically end in a consonant that can, and often must, be parsed as the onset to an empty-headed syllable. Although this is not the case in most later varieties of Old French, the prediction is borne out by our data. I conclude by examining the implications of this analysis for the accentuation and phonotactics of monosyllables and for the study of prosodic change in Old French.

1 Introduction

Lexical stress in Old French (9th–13th century) shows a simple surface pattern: it is final (1a), except where the final vowel is a schwa, in which case it is penultimate (1b):

(1) a. *petit* [pə.ˈtit] 'small.M'
    b. *ensemble* [ẽn.ˈsẽm.blə] 'together'

In one sense, this surface pattern persists until the apocope of final schwa at the end of the 16th century, when stress becomes regularly word final. In another sense, it undergoes important changes during the Old and Middle French periods, as lexical stress is partially replaced by 'group stress', i.e. stress assigned not at the level of the prosodic word, but at the

right edge of a higher prosodic constituent (cf. Rainsford 2011, Marchello-Nizia 2015, Gess et al. in press). This change is reflected in John Palsgrave's (1530) detailed description of French pronunciation, where he notes that all monosyllables are unstressed except before a 'poynt', i.e. at the end of a clause:

> Generally there is no worde of one syllable in the frenche tonge that hath any accent, except the comyng next vnto a poynt be the cause of it (Palsgrave 1530: 112).

While lacking the theoretical tools to formalize the observation, philologists and historical linguists have long recognized the importance of the development of group stress for French phonology. Pope (1952 [1934]), for example, identifies a turning point between Early and Later Old French, dividing the historical development of the language into 'Period I' and 'Period II':

> The dominant factors in the evolution of pronunciation in Later Old and Middle French are the gradual lessening of the heavy tonic stress that characterised Period I and a new tendency to link closely together words closely connected in thought (Pope 1952: §170).

The proposed link is between a change in nature of stress and the development of new 'linking' phenomena, most notably *liaison*, a process which resyllabifies all final consonants into the onset of a following vowel-initial word; before a consonant, they are deleted (Pope 1952: §611–§624). While I reject Pope's views on the nature of stress — 'heavy tonic stress' implies that stress systems can vary according to how vigorously the speaker exhales during the tonic — the proposed link between stress and a linking phenomenon which fundamentally affects syllable structure remains a valid one. Ségéral and Scheer (in press: ch. 22) provide a 21st-century formulation of the same fundamental observation: there was an enlargement of the computational domain beyond the prosodic word, affecting a range of (morpho-)phonological processes, including stress assignment, the syllabification of final consonants and even the cliticization of subject pronouns.[1]

---

[1] There is, however, no evidence from the principal 16th-century descriptions of French prosody (Palsgrave 1530, Meigret 1550) that the position and realization of primary stress in words of more than one syllable is affected by this shift in the computational domain. Indeed, as in the quote above, all of Palsgrave's observations which can be cited in support of a group-stress analysis of 16th-century French are explicitly restricted to "words of one syllable". This suggests that we must consider the possibility that the prosodic word retains a role in the prosodic system despite the shift in the computational do-

The goal of this paper is modest in comparison with such fundamental questions. I will show that there is a clear association between the stress rule and phonotactic constraints on syllable structure at a stage in Early Old French when the prosodic word was still the relevant phonological domain for stress and syllabification, i.e. the end of Pope's Period I. I will not attempt to analyse 'Old French' in general, since this encompasses a plethora of diatopic and diachronic varieties which were certainly at different stages of prosodic change. Instead, I will provide an comprehensive account of a single conservative variety: early literary Anglo-Norman as recorded in two of the oldest extant Old French manuscripts. Although the analysis I propose draws heavily on previous work by Jacobs (1994), by accounting for all — and only — the forms found in these two texts, I will show that this analysis makes clear and accurate predictions about what is and what is not possible when the prosodic word is the relevant domain for stress and syllabification, and suggest therefore that these predictions can be used as diagnostics for the advance of prosodic change.

2 Method

The data and analysis are based on an exhaustive study of every graphical form in two Early Old French texts: the *Life of Saint Alexis* (ed. Rainsford and Marchello-Nizia 2018, henceforth AlexisRaM) and the *Song of Roland* (ed. Moignet 1972, henceforth RolMoign). In each case, the editions are based on a single, early 12th-century manuscript copied in England (1121 for AlexisRaM, 2nd quarter of the 12th century for RolMoign). Not only are the manuscripts contemporary and from the same region, they are also among the earliest manuscripts containing Old French texts of sufficient length to allow a comprehensive study of phonotactic constraints.[2] The texts themselves were composed in the mid- to late 11th century and in France, possibly Normandy. It is therefore valid to assume that the variety of French used in both texts is very similar. To avoid ambiguity, I will refer to this particular variety of early 12th-century literary Anglo-Norman simply as the 'AlRol' variety of Old French.

To gather the data, I first extracted all unique graphical forms with accompanying lemmatization and part-of-speech annotation from the *Base*

---

main. Although I will address this question directly in forthcoming work, it is tangential to the goal of the present paper and will not be developed further.

[2] Earlier texts, such as the 9th-century *Strasbourg Oaths* and *Sequence of Saint Eulalia* are too short, while the 10th-century *Passion of Clermont* and *Life of Saint Leger* were copied in a mixed Franco-Occitan scripta, making them unsuitable for phonotactic analysis.

Phoneme	Grapheme	Assonates with
	PRETONICS	
i	*i*	n/a
E [ɛ] [e] [ə]	*e*	n/a
a	*a*	n/a
ɔ	*o*	n/a
u	*o, u*	n/a
y	*u*	n/a
	TONICS (M)	
i	*i*	–
e	*e*	–
ɛ	*e*	/aj/ > /ɛ/
a	*a*	/aj/
ɔ	*o*	/ɔw/ /ɔj/
u	*u, o*	/uj/ /ũj̃/
y	*u*	/yj/ /ỹj̃/
ã	*a*	/ẽ/ /æ̃j̃/ /ẽj̃/
ẽ	*e*	/ã/ /æ̃j̃/ /ẽj̃/
	TONICS (MM)	
ie	*ie, e*	rarely /eː/
ei	*ei*	rarely /ẽĭn/
eː	*e*	rarely /ie/
uɛ	*oe, ue, o*	–

Table 1: Vowel phonemes reconstructed in AlexisRaM and RolMoign.

de français médiéval corpus (BFM 2019). AlexisRaM contains a total of 1414 distinct forms, while RolMoign contains 4543. I then generated semi-automatic broad phonemic transcriptions for each individual form. These transcriptions were based on the hypothesis that the orthography is more or less phonemic. My transcriptions are faithful to the manuscript, in the sense that where orthographic variation indicates variants in pronunciation, the two forms are transcribed differently. For example, *cadeir* 'to fall' is transcribed [ka.ˈðejr] but *caeir* is transcribed [ka.ˈejr], with loss of the dental fricative [ð]. Distinctions in the vowel system were especially problematic, since phonemic differences are not systematically transcribed. Here, the reconstruction was informed by historical grammars (Pope 1952, Fouché 1952–1961) and etymological considerations. Fortunately, the versification of the two texts is based on grouping together lines ending with a similar final tonic vowel into regular stanzas

(AlexisRaM), or *laisses* of unequal length (RolMoign). The study of these assonances is invaluable in identifying which phonemes were distinct at this time where the orthography is ambiguous (see Short 2005 for Rol-Moign). For example, *e* can represent [e] [ɛ] [eː] [ẽ] and some tokens of underlying [ie] in tonic position, in addition to [ə] in pre- and post-tonic position. Reconstructed vowel phonemes and the corresponding graphemes are presented in Table 1. More details about the transcription of specific segments are provided in the associated material at the end of the paper.

Finally, transcriptions were semi-automatically syllabified based on the sonority hierarchy.[3] Primary stress was assigned to the final non-reduced vowel of a polysyllable. Each transcription was then exported as a data table listing properties of the onset, nucleus and coda of each syllable by its position in the word (pre-tonic, tonic and post-tonic) (cf. Rainsford 2020).

3 Right-edge phonotactics

In this section, I summarize the phonotactic restrictions attested at the right-edge of prosodic constituents: word-internal syllable codas (§3.1) and word-final clusters (§3.2, §3.3). Noting the absence of 'V# structures (§3.5), I conclude by examining possible exceptions to the typology (§3.6).

3.1 Type A: Codas in pretonic syllabes

Word-internal codas in AlRol consist maximally of a single segment: a glide /j w/, a sonorant (/r/, a nasal or a lateral) or /S/. Nasals normally show place assimilation to a following consonant (e.g. *empeint* [ẽm.ˈpẽjnt] 'strikes.PRS.3SG' but *enchacet* [ẽŋ.ˈka.t͡səθ] 'chase.after.PRS.3SG') and consequently may be represented phonemically as a nasal archiphoneme /N/ underspecified for place features.[4] The phonemic opposition between the lateral phonemes /l/ and /ʎ/ is neutralized in word-internal codas and reflexes of both phonemes are realized [ɫ] (later vocalized to [w]), which I will represent phonemically as /L/. Finally, regressive voicing assimilation neutralizes the opposition

---

[3] The Python scripts used remain under development, but the code is freely available at https://sourceforge.net/projects/syllabic-verse-analysis/.

[4] A small number of forms suggest that nasal assimilation was not systematic, e.g. *conpta* ?[ˈkũm.tə] 'count.OBL.SG' < Lat. CŎMĬTEM. The historical development of this form shows late syncope of the Vulgar Latin penult, see Morin (2003) for a detailed discussion.

Type	Cluster	Example		
B1	pl	e.ˈsæ̃m.plə	*esample*	'example'
	pr	ˈsẽm.prəs	*sempres*	'always'
	bl	ẽn.ˈsẽm.blə	*ensemble*	'together'
	br	tə.ˈnɛ.brə	*tenebre*	'shadow'
	tr	ˈał.trə	*altre*	'other'
	dr	ˈpɛr.drə	*perdre*	'to lose'
	kl	ˈbu.klə	*bucle*	'buckle'
	kr	–	–	
	gl	a.ˈvɔ.glə	*avogle*	'blind'
	gr	ˈbu.grə	*bugre*	'Bulgarian'
	fl	æ.mi.ˈra.fləs	*amirafles*	'emir'
	fr	ˈsuɛ.frəθ	*soefret*	'suffer.PRS.3SG'
	vr	ˈpɔ.vrə	*povre*	'poor'
	ðr	ˈpeː.ðrə	*pedre*	'father'
B2	zm	ˈpɛz.məs	*pesmes*	'worst'
	zn	ał.ˈmɔz.nə	*almosne*	'alm'
	zl	ˈfrajz.lə	*fraisle*	'fragile'
	łn	ˈdʒał.nə	*jalne*	'yellow'
	łm	ˈhɛł.mə	*helme*	'helmet'
	rl	ˈkar.ləs	*Carles*	'Charles'
	rr	ˈkɛr.rə	*querre*	'to seek'
B3	dʒ	me.ˈsa.dʒə	*message*	'message'

Table 2: Type B: Clusters attested in ˈV(C)__ə# but not ˈV(C)__# contexts.

between the sibilants /s/ and /z/, represented phonemically by the archiphoneme /S/. Other fricative codas are not found in our text, except for one form with [ð] in word-internal coda position arising through regular sound change: *ve**d**ve* [ˈveð.və] < Lat. vĭDŭA 'widow'.

A greater variety of codas are found at morpheme boundaries in compound words, e.g. *fo**rs**fait* [fɔ**rs**.ˈfajt] 'criminal act', *ar**c**baleste* [ar**k**.ba.ˈlɛs.tə] 'crossbow' and in Latin loanwords, e.g. *ba**p**tizet* [ba**p**.ti.ˈtse:θ] 'baptize.PTCP', *affli**c**tiuns* [a.fli**k**.ti.ˈjũns] 'penitence.PL'). Although coda stops are normal in modern French (cf. Dell 1995), they are exceptional in AlRol. Given the small number of cases, I will assume that Latin forms were not (yet) well enough integrated to affect French phonotactics.

3.2 Type B: Clusters impossible in word-final position

Included in type B are all attested consonant clusters which are phonotactically excluded from appearing in word-final position. These clusters are broadly identical to those which blocked the apocope of final non-low vowels historically (cf. Pope 1952: §258). Type B1 consists of tautosyllabic obstruent + liquid clusters, which behave as branching onsets and require a support vowel. For historical reasons, B1 clusters are frequently found post-consonantally, i.e. in 'VC__ə# contexts. Where a sonorant, a lateral, /s/ or /z/ were brought into contact with /r/ or /l/ through syncope of an intervening vowel, an epenthetic consonant developed in all cases except [sl] and [zl] clusters, e.g. [ẽn.ˈsẽm.blə] < °[en.ˈsem.lu] 'together' < Lat. IN SĬMŬLO (see Pope 1952: §369–§370). All remaining sequences of voiced continuant + sonorant clusters found in AlRol (except [rn] and [rm], see §3.3) are also of type B and are grouped together as type B2.[5] These are heterosyllabic and cannot occur in 'VC__ə contexts. Type B3 contains only the affricate /dʒ/, which has an exceptional distribution: it is the only obstruent which cannot appear, devoiced, in word-final position.[6]

3.3 Type C: Clusters possible in word-final position but not internally

Included in Table 3 are all word-final consonant clusters except those ending in a flexional /s/ or /θ/, which we will consider in section 3.4. Voiced obstruent phonemes /b d g v dz ð z/ are given in parentheses as they are underlyingly present but subject to final obstruent devoicing. This gives rise to alternations within paradigms such as *receif* [rə.ˈtsejf]

---

[5] It is not clear how to interpret the hapax *mezre* (AlexisRaM l. 441) since neither the meaning nor the etymology are clear. If it is descended from Lat. *mĭsera* 'wretch.F' as the editors suggest, it would represent an exceptional case of a [zr] cluster without an epenthetic consonant; if instead it is a variant of *medre* [ˈmeː.ð.re] 'mother', it would be the only case in which *z* represents [ð] in AlRol.

[6] Historically, final vowel apocope feeds final obstruent devoicing, giving rise to morphological alternations such as *receif* [rə.ˈtsejf] < °[re.ˈtse:.vu] 'receive.PRS.1SG' and *receivent* [rə.ˈtsej.vət] < °[re.ˈtse:.vunt] 'receive.PRS.3PL'. I make the conservative assumption that final obstruent devoicing remains an active phonological role in AlRol and therefore that the surface [f] in [rə.ˈtsejf] is underlyingly an instance of final /v/. However, before the second wave of final vowel apocope in the 16th century, the final devoicing rule becomes inactive and the feature [–voice] is lexicalized, giving rise to modern French morphological alternations such as *neuf* /nœf/ 'new.MSG' vs. *neuve* /nœv/ 'new.FSG'. If this were already the case in AlRol, type B3 could be extended to include all voiced obstruents.

Type	Phoneme	V__#			C__#		
C1	p (b)	trɔp	*trop*	'too'	kɔɫp	*colp*	'blow'
	t (d)	pə.'tit	*petit*	'small'	haɫt	*halt*	'high'
	k (g)	es.'kiek	*eschec*	'failure'	frãŋk	*franc*	'Frank'
	ʦ (ʣ)	leːʦ	*lez*	'beside'	ẽnʦ	*enz*	'in(wards)'
	f (v)	su.'eːf	*suef*	'gently'	ʦɛrf	*cerf*	'stag'
	θ(ð)	fejθ	*feit*	'faith'	–	–	
	s (z)	paj.'is	*pais*	'land'	kɔrs	*cors*	'body'
C2	m	krĩẽm	*criem*	'fear.PRS.1SG'	ẽn.'fɛrm	*enferm*	'sick'
	n	bĩẽn	*bien*	'well'	ʤurn	*jurn*	'day'
	ɲ	pũj̃ɲ	*puing*	'fist'	–	–	
	l	ʦiel	*ciel*	'sky'	–	–	
	ʎ	ɔʎ	*oil*	'eye'	–	–	
	r	ku.'lur	*culur*	'colour'	–	–	
C3	j	aɫ'tryj	*altrui*	'someone else'	–	–	
	w	ãn'ʤɔw	*Anjou*	'Anjou'	–	–	

Table 3: Type C: Clusters attested both in 'V__ə# and 'V__# contexts.

'receive.PRS.1SG' and *receivent* [rə.'ʦej.**v**ət] 'receive.PRS.3PL'. All type C clusters, with both voiced and voiceless obstruents, are also attested in 'V(C)__ə# contexts.

Type C1 includes all single obstruent phonemes except for /ʤ/ (type B3). All are found both in V__# and in C__# contexts. Type C2 contains sonorant-final clusters found in word-final position. Yet unlike in word-internal syllable codas, phonemic oppositions are not neutralized in word-final position. The lateral phonemes /l/ and /ʎ/ are graphically distinct, with /ʎ/ represented by the grapheme *(i)ll* (e.g. *solei**ll*** 'sunshine', *voei**ll*** 'want.PRS.1SG'). Nasal stops /m/ /n/ and /ɲ/ are also differentiated in word-final position. The final consonant of *hu**m*** 'man' < Lat. HŎ**M**O and *nu**m*** 'name' < Lat. NŌ**M**EN is systematically written as *m*. The 'palatal' nasal phoneme may be written either *gn* or *ng* in word-final position, and while some variants do indicate possible depalatalisation (e.g. *cumpai**n***, *cumpai**gn*** 'companion.NOM.SG)': [kũm.'pæ̃j̃**n**] or [kũm'pæ̃j̃**ɲ**]?), in Anglo-Norman this is a general process which also affects the palatal nasal in intervocalic position (e.g. *compa**ign**ie*, *cumpa**in**ie* 'company'; cf. Pope 1952: §1182).

The groups [-rn] and [-rm] are unusual in that they are the only clusters of two sonorants which are of type C rather than type B. However, variants *jurn/jur* 'day' and *carn/car* 'flesh' show a change in progress eliminating these forms by deletion of the final nasal.

3.4 Final /s/ and /θ/

Final /s/ and /θ/ (→ [t] / C__#) are descended from Latin final consonants and are most frequently found as flexional morphemes.[7] Phonotactically, /s/ and /θ/ can be appended to any word, regardless of its type. In forms with a final post-tonic vowel, this results in surface forms ending either [əs] or [əθ], e.g. *altres* ['ał.trəs] 'others', *juret* ['ʤy.rəθ] 'swear.PRS.3SG'. Flexional consonants are the only consonants found following a post-tonic reduced vowel (but see also §6.2). Without a final post-tonic vowel, adding /s/ or /θ/ causes the cluster to be simplified, as shown in Table 4. The addition of a flexional consonant generally neutralizes place oppositions in the sonorants (although perhaps not /m/), with affrication of final /s/ to [ʦ] after palatals. After obstruents, /s/ and /θ/ combine with a preceding non-identical coronal to form an affricate [ʦ], a stop [t], or the cluster [st]. Non-coronal obstruents are normally deleted (cf. Pope 1952: §808), although the philological evidence for this is mixed in our texts. While it is systematic in AlexisRaM, RolMoign shows unexpected graphies such as *rumpt*, *eschecs* and *cerfs*. I assume that these graphies are motivated by morphological fidelity, since in rare cases where final [s] and [t] consonants are not flexional, the expected cluster simplification is found, e.g. *cors* [kɔrs] 'body' < Lat. cŏRPUS, *tens*, *tenz* [tẽns] 'time' < Lat. TĔMPUS.

In summary, the data in Table 4 show that adding final /s/ and /θ/ does not add to the inventory of type C final clusters, except in the case of [st] (see §3.6.1). Previously word-final sonorants show assimilation typical of word-internal codas.

3.5 The curious case of 'V#

Word-final tonic vowels in AlRol are curious because they are extremely rare. In polysyllables, most cases are due to the unconditioned loss of /ð/,[8] a change which I consider on the basis of the orthographic variation to be still in progress at this time. For example, [mɛr.'ʦi(θ)] 'mercy' is written *merci* or *mercit* 'mercy'; the 3SG future suffix [a(θ)] can be written *-at/-ad* or *a*.

Setting aside this sound change, the only remaining polysyllabic exceptions in AlRol involve seven forms with final tonic [i]: *ami* 'friend.M',

---

[7] In nominals, /s/ marks plural on feminine nouns and adjectives and case and number (NOM.SG or OBL.PL) on masculine nominals; in the verbal domain, it marks 2SG and it is also an adverbial marker. /θ/ marks 3SG on verbs.

[8] I use /ð/ to refer to lexical final [θ] descended from intervocalic [ð] made final by final vowel apocope and /θ/ to refer to flexional final [θ] descended from Latin final [t].

Phoneme	Result	Example	
		+ /s/	
p (b)	s	*dras*	'sheets'
t (d)	ts	*porz*	'passes'
k (g)	s	*sas*	'sacks'
ts (dz)	ts	*voiz*	'voice(s)'
f (v)	s	*sers*	'servants'
(ð)	ts	*pechez*	'sins'
s (z)	s	*gros*	'large.M.PL'
m	ms	*nums*	'names'
	ns	*feruns*	'do.FUT.1PL'
n	ns	*bans*	'decrees'
ɲ	nts	*cumpainz*	'comrade.NOM.SG'
l	ɫs	*chevels*	'hair.PL'
ʎ	ɫts	*oilz*	'eyes'
r	rs	*tresors*	'treasure.NOM.SG'
j	js	*blois*	'blue'
w	ws	*sarqueus*	'coffins'
		+ /θ/	
p (b)	–	–	
t (d)	t	*respont*	'reply.PRS.3SG'
k (g)	–	–	
ts (dz)	tst	*chevalzt*	'ride.SBJV.PRS.3SG'
f (v)	t	*sert*	'serve.PRS.3SG'
(ð)	t	*veit*	'see.PRS.3SG'
s (z)	st	*alast*	'go.SBJV.PST.3SG'
m	mt	*cleimt*	'call-out.SBJV.PRS.3SG'
	nt	*creint*	'fear.PRS.3SG'
n	nt	*tint*	'hold.PST.3SG'
ɲ	nt	*puint*	'spur.on.PRS.3SG'
l	ɫt	*valt*	'be.worth.PRS.3SG'
ʎ	ɫt	*salt*	'jump.PRS.3SG'
r	rt	*quert*	'seek.PRS.3SG'
j	jt	*fuit*	'flee.PRS.3SG'
w	wt	*out*	'have.PST.3SG'

Table 4: Flexional consonants /s/ and /θ/ with Type C word-final clusters.

Latin	proto-fr.	OFr.		Example
-īcu	°-iːɣu	-i(j)	*ami*	'friend.M'
-aca	°-aːɣa	-aj	*baie*	'(laurel) berry'
-īvi	°-ij	-i(j)	*atendi*	'wait.PST.1SG'
-avi	°-aj	-aj	*amai*	'love.PST.1SG'

Table 5: Etymological comparison of Old French tonic [i]-final forms with equivalents in tonic [a]

enemi 'enemy', *atendi* 'wait.PST.1SG', *otri* 'grant.PRS.1SG' and the proper names *Henri*, *Thierri* and *Valeri*. But are these really vowel final, or does *i* represent [ij]? Vj syllable rhymes are attested for all other vowels in AlRol and, as shown in Table 5, the development of words derived from Latin -ĪCU and -ĪVI passes through an [ij] stage. Moreover, in -ĀCA and -ĀVI suffixes, this stage is still attested in AlRol.

This leads to an important claim:

(2) *'V#
     The tonic vowel is never word-final.

This claim holds true for AlRol but not for varieties of Old French after /ð/ has been lost. This does not make the observation any less important, as it shows on the contrary that the loss of /ð/ triggers a key phonotactic change.

3.6   Exceptions to the typology

3.6.1   [st]

Historically, the cluster [st] must be analysed as heterosyllabic in order to account for patterns of sound change. Word-initially, an epenthetic vowel develops to eliminate all [s]C onsets, e.g. *esteile* [**e**s.ˈtej.lə] 'star' < °[ˈsteːla]. The cluster [st] also blocks open syllable lengthening and diphthongization, e.g. *beste* [ˈbɛs.tə] 'beast' < Lat. BĔSTĬA, never *[ˈbie.stə]. Yet synchronically, [st] can behave similarly to single [s] and [t]: it may follow /N/ and /r/ both word-finally, e.g. *parduinst* [par.ˈdũĩ**nst**] 'pardon.SBJV.PRS.3SG' *morst* [mɔ**rst**] 'bite.PST.3SG' and word-internally, e.g. *hanste* [ˈhæ̃**n.st**ə] 'lance', *estoerstrent* [es.ˈtuɛ**r.st**rət] 'twist.PST.3PL'. This suggests that sC clusters can be tautosyllabic following a consonant (see Dell 1995: 16 for a defence of this view in modern French). Note that there is evidence from AlexisRaM that [st] could be reduced to [s] in C_-

_# contexts, as show by variants such as *duins* 'give.SBJV.PRS.3SG', *raens* 'redeem.PST.3SG'.

3.6.2   The *-ent* suffix

The third-person plural suffix is consistently written *-ent* and is always syllabic. Depending on the pronunciation — and the only pronunciation that can be reconstructed with any certainty is [ət][9] — this constitutes either the only example of a word-final cluster ([nt]) or of [t] after a post-tonic vowel.

3.6.3   Proparoxytones?

AlRol contains a small number of semi-Latinate words which may have had proparoxytonic stress. These are *aneme* 'soul', *angele* 'angel', *ydeles* 'idols', *humeles* 'meek', *imagene* 'image' and *virgene* 'virgin'. It is certain both from the verse form and subsequent phonetic developments that these forms were stressed on the antepenult. It is also certain that the two orthographic post-tonic syllables only occupied a single metrical position.[10] RolMoign also contains the variants *anme* for *aneme* and *angle* for *angele*, showing that paroxytone variants were also available. In Later Old French, the forms become paroxytonic, either by syncope of the penult (*anme*, *humble*) or by apocope of the whole final syllable (*ange*, *image*, *virge*).

   None of this, however, explains why a proparoxtone orthography differing from the Latin spelling would be used if the pronunciation were not in some way atypical in AlRol. With regard to their phonotactics, it can be observed that syncope of the penult would give rise to an inadmissible consonant clusters, and this combined with the influence of church Latin pronunciation could explain the retention of proparoxytonic stress (cf. Pope 1952: §642–§645). It is also the case that the final consonant is always a sonorant and thus potentially a valid word-internal coda. I will propose a possible explanation for these forms in §6.2.

---

[9] Cf. Pope (1952: §437). There are no comparable developments found in other morphemes.

[10] This is often taken as 'evidence' for a paroxytone prononiciation (e.g. Fouché 1952–1961), but this assumes a one-to-one relationship between metrical positions and phonetic syllables. It is possibly significant that proparoxytone variants in RolMoign only occur at the end of the line, a position in which post-tonic syllables do not 'count' for the metre.

4 Syllable rhymes

This section briefly examines possible syllable rhymes in AlRol with particular attention to syllable weight. The vowel system used in the reconstruction was outlined above in Table 1. In pretonic position, only monomoraic vowels are identified, while in tonic position, bimoraic primary diphthongs also occur as a result of Vulgar Latin stressed open syllable lengthening (cf. Loporcaro 2015). Although its precise phonetic value is uncertain, the vowel [eː] — descended from [a] in a stressed open syllable and written simply as *e* — reconstructed as a phonemically long monophthong.[11]

4.1 Pretonic syllables

Pretonic syllables contain only simple vowels (cf. Table 1) and maximally one coda consonant (cf. §3.1).

A very small number of forms (nine across both texts) have three elements in the syllable rhyme. Eight involve Ṽjn rhymes, e.g. *join*ture [ʤũ̃ĵn.ˈty.rə] 'joint', *saint*isme [sæ̃ĵn.ˈtiz.mə] 'most holy' while one has a sibilant coda: *mais*nede [mˈajz.ˈneː.ðə] 'household'. In the case of Ṽjn rhymes, it is possible that graphical *n* only indicates nasalization of the preceding vowel and did not represent a segment, i.e. [ʤũ̃ĵ.ˈty.rə]. Much about the chronology of nasalization in French is uncertain, and although the loss of nasal consonants is typically dated to a much later period (cf. Pope 1952: §437), most evidence comes from descriptions of word-final (and therefore post-tonic) nasal consonants. On the basis of very few types whose phonetic value is not certain, it is unclear that our analysis should allow for three-element rhymes in pretonic syllables.

4.2 Tonic syllables

Tonic syllables may have V (3a), VC (3b), VV (3c), or VVC (3d) rhymes, illustrated here by words with a final post-tonic syllable:

(3) a. *escapet* [es.ˈka.pəθ] 'escape.ᴘʀꜱ.3ꜱɢ' (V)
  b. *halte* [ˈhaɫ.tə] 'high.ꜰ.ꜱɢ' (VC)
  c. *fiere* [ˈfie.rə] 'proud.ꜰ.ꜱɢ' (VV)
  d. *pierres* [ˈpier.rəs] 'stones' (VVC)

---

[11] This reconstruction is proposed by Pope (1952: §231) and Morin (2008), [æ] is also proposed (cf. Ségéral and Scheer in press: ch. 17).

Unlike pretonics, tonic syllables may contain a bimoraic nucleus. Moreover, the range of three-element rhymes at the tonic is far wider than the few cases attested in pretonics, including not only Ṽj̃n and VjS groups but also diphthongs and the long vowel /eː/ followed by a coda.

Without a final post-tonic vowel, the same typology is found, provided that the final consonant is considered to be 'outside' the syllable:

(4)   a. *galop* [ga.ˈlɔ⟨p⟩] 'gallop' (V)
      b. *cuard* [ku.ˈar⟨t⟩] 'coward.ᴍ' (V)
      c. *suef* [su.ˈeː⟨f⟩] 'lovely.ᴍ. sɢ' (VV)
      d. *detoerst* [də.ˈtuɛr⟨st⟩] 'twist.ᴘsᴛ.3sɢ' (VVC)

As noted in section 3.5, word-final tonic vowels are always followed by a consonant or a glide.

In short, the maximal rhyme of a pretonic syllable is VC; a tonic may additionally show VV or even VVC syllable rhymes.

5   Analysis

5.1   Final consonants in Type C clusters

As in many languages (cf. Côté 2011), type C final consonants in AlRol are not normal codas: clusters and obstruents other than /S/ are allowed, and place distinctions are retained in nasals and laterals. Ségéral and Scheer (in press: ch. 22) argue that single final consonants in Old French are intervocalic, while final consonants in C__# contexts develop like word-internal onsets in the same context. Similarly, Jacobs (1994) analyses final consonants as onsets to a catalectic final syllable, highlighting that Gallo-Romance final vowel apocope provides a good historical justification for this analysis (cf. Pope 1952: §256).[12] In summary, final consonants in type C words are outside the final syllable of the surface form and are most similar to word-internal onsets, not codas.

5.2   Jacobs' (1994) stress rule

The point of departure for our analysis of stress is Jacobs' (1994) proposal of an Old French stress rule based on syllabic trochees parsing right-to-

---

[12] Dell (1995) proposes a similar analysis to account for final consonants in Modern French which result in part from a second wave of post-tonic vowel apocope dating from the 16th century. He argues that that final consonants in words such as *table* are onsets to a 'degenerate syllable'.

left. The framework used is that of Hayes (1995) but with a ban on mono-syllabic 'degenerate' feet. The prosodic word receives stress by End Rule Right. This gives a correct prediction for all words with a post-tonic vowel, whether of type B or type C:

(5) *fraisle* ['frajz.lə] 'fragile.SG'

```
(     x        )
(     x     .  )
      σ     σ
    frajz   lə
```

(6) *escapet* [es.ˈka.pəθ] 'escape.PRS.3SG'

```
(        x         )
    (  x     .   )
  σ      σ     σ
  es     ka   pəθ
```

For words of type C without a final vowel, Jacobs posits a catalectic final syllable, which fills the weak position of the trochaic foot:

(7) *trop* [trɔp] 'too much'

```
(   x         )
(   x     .   )
    σ    [σ]
   trɔ    pØ
```

The position of primary stress for all data presented in section 3 can be correctly parsed by this rule, suggesting that Jacobs' analysis is correct for AlRol.

5.3 Modifications to Jacobs' analysis

However, two issues require further clarification. First, Jacobs (1994) accounts for the fact that clusters of type B do not appear in word-final position by positing that under certain conditions, the nucleus of the 'catalectic' final syllable must be spelled out. Discussing the derivation of *colp* 'blow' and *jalne* 'yellow.SG', Jacobs begins by positing an underlying representation with a catalectic final syllable, i.e. /kɔL.pØ/ and /ʤaL.nØ/, to which the trochaic stress rule is then applied as in (7) above. Subsequently, the final consonant of *colp* is subject to the following resyllabification rule, associating it to the final syllable:

(8)

```
        σ ⎯ ⎯ ⎯           [σ]
        │        ⟍ ⎯ ⎯     ╱
        C          C
        │          │
     [+appr]     [−son]
```
(Jacobs 1994: 56)
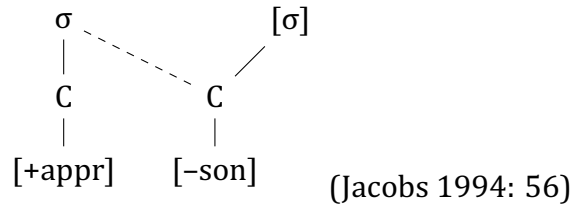
In (8) I adopt Jacobs' formalism and resyllabification is indicated by the dashed line. In the case of *jalne*, none of the proposed resyllabification rules apply and consequently "the catalectic syllable is phonetically spelled out as schwa" (Jacobs 1994: 56). While it is true that certain final consonant clusters do not occur word finally (i.e. the Type B clusters discussed in §3.2), it is unlikely that this is due to an active rule of vowel spellout. Type C consonants can occur both in V(C)__# V(C)__ə# contexts (e.g. *port* [pɔ**rt**] 'pass', *porte* [pɔ**rt**ə] 'door'), so these instances of final [ə] cannot be explained through the same mechanism. Yet if [ə] is present in the underlying representation in the case of *porte*, it is then unclear why a learner should posit that *jalne* has an underlyingly catalectic final syllable. Moreover, the hypothesis that underlying [ə] and a spelled-out catalectic syllable were in some way distinct can be tested by examining cases in which the consonant cluster is subsequently simplified. For example, the presence of a final [ə] in *pire* 'worse' is explained historically by the presence of a glide + /r/ cluster in proto-French: Lat. PĔIOR > °['piɛj.jur] > °['piɛj.rə]. This cluster is lost when the °[iɛj] triphthong simplifies to [i], yet contrary to the prediction of the catalectic vowel spellout hypothesis, the final vowel is retained in Old French ['pi.rə]. Equally, the simplification of [ðr] > [r] which was ongoing in the AlRol period does not lead to final vowel loss, as we see variants such as *pere*/*pedre* [peː.(ð)rə] 'father' < Lat. PATREM but never *per.

Second, and perhaps more importantly, Jacobs maintains that the catalectic syllable can exist even when it contains no phonetic material at all, i.e. when the tonic vowel is final in the word, as in *di* 'day', *ni* 'nest', *pré* 'field' and *bru* 'heath'. Not only is this circular — an empty syllable is posited because stress is underlyingly trochaic, but stress is only underlyingly trochaic if we posit empty syllables — but it fails to account for the impossibility of 'V# in AlRol. Of the four examples cited by Jacobs, *ni*, *pré* and *bru* all show loss of final /ð/ and *di* is [i]-final. In short, I consider that a trochaic stress rule is correct for AlRol, but will begin to break down as soon as independent surface phonotactic evidence for the final catalectic foot has been lost.

Pigott's (1999) mechanism of 'remote-licensing' formalizes constraints regulating the appearance of empty-headed final syllables. In this approach, all prosodic segments must be licensed by a higher prosodic constituent. Most segments are licensed by the prosodic constituent which immediately contains them, i.e. consonants are licensed by syllables, syllables by feet, etc. However, Pigott posits a mechanism of 'remote-licensing' of prosodic constituents, defining the conditions in which a prosodic constituent can be licensed by a constituent even higher in the prosodic hierarchy:

> R-LICENSING CONTEXT
> An element β may be R-licensed by α iff it is leftmost/rightmost in α and is immediately dominated by a prosodic category that is leftmost/rightmost in α (Pigott 1999: 165).

More specifically, the parameter R-LICENSING/CONS stipulates that final consonants are R-licensed by the prosodic word (cf. Pigott 1999: 167). When active, final consonants must be immediately dominated by a syllable at the right-edge of the prosodic word; where they cannot be parsed as codas due to phonotactic constraints, they must consequently be parsed as onsets to an empty-headed syllable. Unlike other syllables, Pigott stipulates that empty-headed syllables cannot themselves license any segments, i.e. they may only contain consonants R-licensed by the prosodic word (1999: 168).

In short, combining Jacobs' stress rule with the R-licensing of final consonants, we predict that surface oxytonic stress can only be generated if there is (i) a final consonant R-licensed at the right edge of the prosodic word which (ii) may be parsed as the onset of a final empty-headed syllable which, in turn, (iii) fills the weak position of a trochaic foot. Where there is no final consonant, there is no empty-headed syllable, and thus stress will be paroxytonic.

The analysis allows for only two possible prosodic structures for the final surface syllable in a word or for a surface monosyllable:
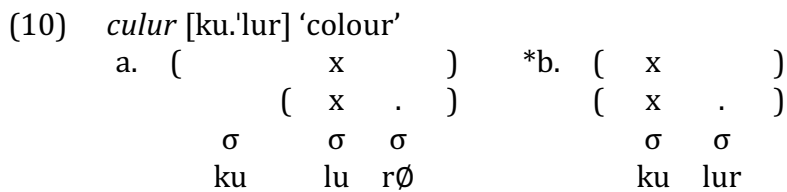
(9)
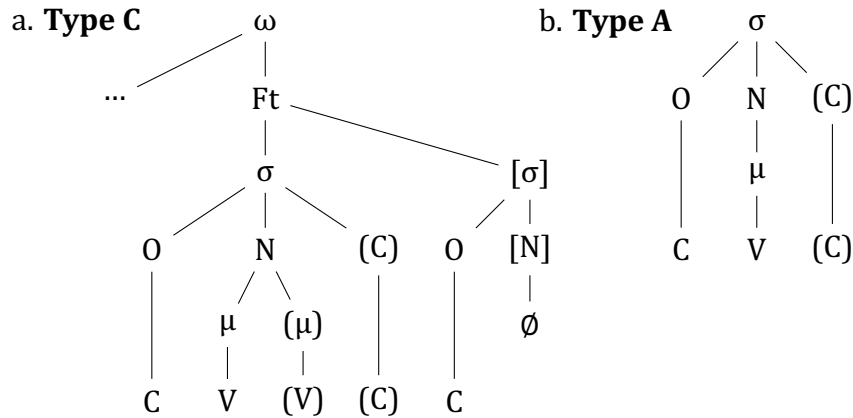
In (9a), the surface syllable has a final R-licensed consonant parsed as the onset to an empty-headed syllable (i.e. it is of type C); it must form a prosodic word in order for the consonant to be licensed and it therefore bears primary stress; the stressed syllable may have a bimoraic nucleus or be super-heavy (cf. §4). In (9b), the surface syllable is underlyingly a single syllable with maximally a single consonant parsed in the coda (i.e. it is of type A); it cannot bear stress and cannot have a bimoraic nucleus.

5.4   Preventing over-generation: the status of final /ə/

However, the analysis proposed above over-generates in two specific cases.[13] First, when there is a single word-final sonorant or /s/ in a word of more than one syllable, it is unclear why this is always treated as an onset to an empty-headed syllable and never as a coda of the final syllable, i.e. why is only (10a) below grammatical when (10b) is ruled out?

(10)   *culur* [ku.ˈlur] 'colour'
      a. (x   )   *b. (x   )
              (x   .   )   (x   .   )
           σ   σ   σ   σ   σ
          ku   lu   rØ   ku   lur

Second, final flexional /s/, /θ/ (and /t/ in the case of the *-ent* [ət] '3PL' suffix) never behave as onsets to an empty-headed syllable, i.e. (11b) below is the only grammatical form:

---

[13] I am grateful to Benjamin Molineaux for highlighting these issues and encouraging me to develop my account of them.

(11)   *soefret* ['suɛ.frəθ] 'suffer.PRS.3SG'

```
    *a.  (              x        )      b.  (      x          )
         (      x    .  )                   (      x    .     )
            σ         σ    σ                    σ         σ
           suɛ       frə   θØ                  suɛ       frəθ
```

Both of these cases highlight an important phonotactic restriction in Old French which I have as yet not accounted for: when the final syllable of a PWd is *not* empty-headed, it can only contain the vowel [ə]; equally, a reduced vowel cannot be stressed. Thus an account of the impossibility of *['ku.lur] and *[suɛ.'frəθ] must take into account the underlying nature of the final [ə] vowel. I argue above (§5.3) that despite the fact that many final [ə] develop as support vowels, by the time of the AlRol text they must be considered lexicalized. But what exactly is present in the lexical representation? In non-final syllables, [ə] forms phonemic oppositions with other simple vowels (/i/ /u/ /y/ /a/). Moreover, we may reconstruct a system in which non-final [ə] is in complementary distribution with [ɛ], illustrated below with four cases of vowels derived from Vulgar Latin [ɛ] (cf. Pope 1952):

(12)   a.   *cervel* [ʦɛr.'vɛl] 'brains' < VLat. °[kɛ.rɛ.'bɛl.lu]

       b.   *cervel* [ʦɛr.'vɛl] 'brains' < VLat. °[kɛ.rɛ.'bɛl.lu]

       c.   *nuveles* [nu.'vɛ.ləs] 'new.FPL' < VLat. °[no.'vɛl.las]

       d.   *nevuld* [nə.'vułt] 'nephew.OBL' < VLat. °[nɛ.'po:.te]

From the four cases in (12), we can see that the synchronic distribution of these vowels in Old French can be summarised as follows: [ə] appears only in unstressed open syllables (12d); in unstressed closed syllables (12b) and in stressed syllables, (12a, c), [ɛ] is found.[14] Consequently, the best analysis of non-final [ə] seems to be that it is not a phoneme but an allophone of /ɛ/. Morphological alternations such as *apelt* [a.'pɛłt] 'call.SBJV.3SG' vs. *apelez* [a.pə.'le:ʦ] 'call.2PL' also provide evidence in favour of this view. Final [ə], however, is different in all respects. The fact that many final [ə] originate as support vowels means that there is

---

[14] The distribution before nasal consonants in unstressed open syllables is perhaps not complementary, as Pope (1952: §449) contrasts *mener* [mə.'ne:r] 'to bring' < VLat. °[me.'na:re] with *ramer* [rǣ.me:r] 'to row' < VLat. °[re.ma:.re]. Note that reflexes of VLat. pretonic /e/ and /ɛ/ merge in all varieties of French.

no consistent morphological alternation with any full vowel in this position.[15] Moreover, since it is the only vowel which can occur in final unstressed syllables, it is by definition in complementary distribution with *all* other vowel phonemes and exists only in opposition to an empty nucleus. These indications suggest an underlying vowel phoneme which, although present in the lexicon, is (at best) underspecified for place features and is distinct from all other vowel phonemes.

Returning to examples (10) and (11) above, I consider that the ungrammaticality of (10a) is due to the fact that the final nucleus in a prosodic word cannot contain a segment with place features: it must either be empty or contain underspecified /ə/. The ungrammaticality of (11), on the other hand, is due to a converse restriction that other nuclei — and in particular the head of a PWd — require vowels to be specified for place features. A further formalization of these restrictions goes beyond the scope of this paper.

6 Consequences

The analysis proposes a clear link between the nature of the segments at the right-edge of a word and the position of primary stress. In this section, I will briefly examine the consequences of this analysis for monosyllables (§6.1) and for the status of final flexional consonants (§6.2).

6.1 Monosyllables

The core prediction of the analysis for many surface monosyllables can be summarized as follows: monosyllables with no final consonant must have a Type A structure (cf. 9b) and are not PWds; monosyllables with a final obstruent (except [s]) or a final cluster must have a Type C structure (cf. 9a) and are PWds; monosyllables with a final sonorant, glide or [s] can be of either type. Thus, lexical monosyllables such as *colp* [kɔɫp] 'blow' or *franc* [fræ̃ŋk] 'Frank' have final onset consonants and/or bimoraic nuclei and are clearly of type C. Clitics such as object pronouns *me* [mə], *i* [i] or forms of the definite article *li/le/la* [li lə la] have no coda consonant and a simple nucleus and are thus of type A.

---

[15] Verbs which in Latin had a thematic /a/-vowel show a consistent alternation between [eː] (past participle and infinitive) and [ə] (PRS.2SG and PRS.3SG), e.g. *portet* ['pɔrtəθ] 'carry.PRS.3SG' vs. *portet* [pur.'teːθ] 'bring.PST.PTCP'. On the basis of this single case of alternation it does not seem justified to conclude that *all* final [ə] are underlyingly reduced variants of /eː/.

Perhaps more interesting is the prediction that some VC monosyllables are compatible with either analysis. In some cases, there is evidence to suggest that they were consistently parsed with a Type A structure: for example, the final nasal of the clitic *en* [ẽn] shows place assimilation to the initial consonant of the following word, e.g. *ne l'**em** puet hom blasmer* 'no-one could blame him for it', showing that the final /N/ was underlyingly a coda. This contrasts with the retention of nasal place features in the underlying final onset consonants of *hum* 'man' and *num* 'name' in Al-Rol (cf. §3). Others were likely to have been consistently parsed as type C, such as *gros* [grɔs] 'fat.ᴍ', which occurs in an inflectional paradigm with forms that are unambiguously of type C, in this case, *grosse* [ˈgrɔ.sə] 'fat.ꜰ'. In some cases, however, it is likely that a single surface form was parsed in some functions as type A and in other functions as type C. A typical case is that of the pronouns *nus* and *vus* [nus]/[vus] 'we/us', 'you.ᴘʟ' < Lat. ɴōs/ᴠōs. These occur in three separate paradigms of personal pronouns: object clitics (13a), subject pronouns (13b) and disjunctive pronouns (13c):

(13) a. *me, te, se, le, la, li, les, lur, **nus**, **vus***

      b. *jo/je, tu, il, ele, nus, vus*

      c. *mei, tei, sei, lui, ele, els, **nus**, **vus***

Of these, the object clitics and the subject pronouns are all compatible with a type A analysis,[16] while the presence of bimoraic vowels and the final consonant cluster in *els* clearly show that most disjunctive pronouns were of type C. The most obvious conclusion here is that *nus* and *vus*, forms which were compatible with either structure (9a) or (9b), could be independent prosodic words, but could also be parsed as a single syllable and integrated into a following prosodic word. Perhaps significantly, even in dialects in which diphthongization of [o] occurs, forms such as

---

[16] The claim that subject pronouns in AlRol are not prosodic words is controversial, and indeed there are a small number of other vowel-final monosyllables in our data that philologists would hesitate to categorize as 'unstressed', such as the deictic adverbs *ça* and *la*. Yet these cases are not as straightforward as they seem. For example, if *jo* could be a prosodic word, it is unclear why some texts show doublets with a bimoraic diphthong (*gie* or *jou*); moreover, *jo* subsequently develops a reduced vowel in pretonic position (cf. Marchello-Nizia 2015). *Ça* and *la* occur also in other texts with a final glide (*çai* and *lai*). In short, while they were not clitics, it is not clear that they were prosodic words either. Note that this is not the same as saying that they were completely 'unstressed': they may still have headed a foot and borne a secondary stress.

*neus and *veus are never attested, a fact that neogrammarian approaches considered 'not easy to explain' (cf. Pope 1952: §827). However, such a development is compatible with the hypothesis that doublets of this kind can be eliminated — assuming that they develop at all — if a form can be parsed either with or without a final empty nucleus.[17]

6.2   Codas in post-tonic syllables

Flexional consonants [s], [θ] and [t] in the suffix *-ent* can occur after final [ə] (cf. §3.4). Two possible analyses could be envisaged here: either these consonants are underlyingly onsets (like other final consonants), in which case we must explain why the empty-headed syllable containing them is invisible to the trochaic stress rule, or they are word-final codas, in which case we must account for why, of the three consonants attested, only one ([s]) regularly occurs in word-internal coda position.

The existence of word-final codas is predicted by the analysis outlined in 5, as every nucleus licenses an optional coda consisting maximally of a single consonant. However, if we admit the existence of word-final codas after final [ə], we might expect clearer evidence that sonorant codas are also possible. While they are extremely rare for historical and morphological reasons, there is nevertheless some evidence to support this view. With regard to [r], the proper noun *Sizer* 'Cize' assonates in RolMoign with *dire* ['di.rə] 'to say', *mise* ['mi.zə] 'put.PTCP.FSG', etc. which indicates a pronunciation ['si.t͡sər]. With regard to [ɫ] and [n], an interesting possibility is that the proparoxytone spellings (cf. §3.6.3) actually denote a paroxytone with a final sonorant, e.g. *angele* ['æ̃n.d͡ʒəɫ] 'angel', *virgene* ['vir.d͡ʒən] 'virgin'. In this view, final orthographic *e* is not syllabic and appears partly due to influence from Latin spelling and partly to highlight the atypical use of a voiced segment after the post-tonic vowel. It is of course encouraging that the reconstruction corresponds exactly to the form borrowed into English. A further example showing the addition of a non-syllabic *e* is found in AlexisRaM. The unique form *el* for the object clitic *le* in the hemistich *en terre el metent* 'they place him in the ground' (AlexisRaM, l. 588) may indicate enclisis of the pronoun *le*, hinting at a pronunication

---

[17]   I note in passing that the present analysis has important implications for sandhi phenomena, in particular the many monosyllabic host + enclitic combinations (cf. Jacobs 1993, Rainsford 2014), all of which are compatible with either a type A or a type C analysis. In fact, in AlexisRaM, nasal place assimilation is found in *nen* for *nem* (*ne* + *me*). Further research is needed on the interaction of stress, syllable structure and sandhi in Old French.

['tɛr.rəł] for *terre el*. In summary, although there is perhaps no conclus-
ive proof that non-flexional word-final coda consonants were possible in
AlRol, assuming their existence would allow us to account for a number
of otherwise exceptional surface forms in a unified way.

Final post-tonic [t], which never occurs as a word-internal coda, is ex-
ceptional, however it is analysed. As it only occurs in AlRol as a part of one
morpheme (the *-ent* [ət] '3PL' suffix), it is difficult to ascertain the reason
for its exceptionality with any confidence. It is perhaps relevant to note
that the related *-no* '3PL' suffix in Standard Italian is invisible for the pur-
poses of stress assignment. Primary stress in Italian is lexically free but
falls on one of the final three syllables in the word, with the sole excep-
tion of the 3PL form of verbs which are proparoxytone in the 3SG, where
the additional the final *-no* cause stress to fall on the *fourth* syllable from
the end of the word, e.g. *telefono* [te.'le:.fo.na] 'phone.3SG' but *telefonano*
[te.'le:.fo.na.no] 'phone.3PL' (cf. Nespor 1993: 175, note 29). Were a sim-
ilar analysis to be applied to *-ent* in AlRol, it would imply that final [t] is in
fact a final onset consonant but that the empty-headed syllable is excep-
tionally invisible to the trochaic stress rule.

7 Conclusion

In this paper, I have argued that there was a link between syllable struc-
ture and prosodic words in a single variety of Early Old French: namely,
that oxytonic word stress is only possible where there is a final conson-
ant which can be parsed as the onset to an empty-headed syllable. On this
basis, the conservative variety of Old French in the two texts that I have
described shows clear evidence that the prosodic word was still the relev-
ant domain for syllabification and stress assignment in Early Old French.

The analysis relies on a number of archaic features, most significantly
the retention of /ð/ in final position, but also the analysis of vowel + *i*
digraphs as Vj clusters, and the analysis of 'proparoxytone' orthography
as representing sonorant codas after the post-tonic vowel. Evidence that
these features are being lost is present even within the two early texts
studied and they were rapidly eliminated over the course of the 12th cen-
tury. The analysis is deliberately backward-looking: it sketches a pros-
odic system on the brink of collapse and makes clear predictions as to
why a shift towards generalized surface CV syllable structure later in Old

French would prove terminal for the existence of a fixed trochaic word-stress rule.

Comments invited

PiHPh relies on post-publication review of the papers that it publishes. If you have any comments on this piece, please add them to its comments site. You are encouraged to consult this site after reading the paper, as there may be comments from other readers there, and replies from the author. This paper's site is here:
https://doi.org/10.2218/pihph.5.2020.4433

Notes on the transcription

I summarise below points of detail regarding the transcriptions in this paper, for the benefit of specialists in French historical phonology.

In accordance with the approach outlined in section 2, the following Early Old French sound changes are *not* taken into account in the analysis:

- Unconditioned loss of [θ]/[ð]. Variation in RolMoign in particular suggests that it was in progress.

- *l*-vocalization (/L/ > /w/ /__C). Consistently written as *l* in the manuscript.

- Deaffrication of [ts] and [ʤ]. No graphical evidence for this: *z* and *c* indicate affricates while *s* marks a fricative.

- Falling > rising secondary diphthongs. Assonance shows that they remained vowel + glide sequences, e.g. *lui*:*vertut*:*pendut* or *Anjou* [ãnˈʤɔw]:*fort*:*corn*.

- Levelling of [aj] > [ɛ]. Evidence from orthography and verse assonance in the texts suggests both [aj] and [ɛ] variants were available to the poet.

- Merger of /ẽ/ and /æ̃/. Distinct in assonance in AlexisRaM, merged in assonance in RolMoign.

- Merger of tonic /e/ and /ɛ/. /e/ < Vulgar Latin ['e] /__C$ is rare but distinct in assonance (laisse 121 of RolMoign).

- Reduction of [ie] > [e] and [uɔ] > [ɔ]. A dialectal development frequent in the orthography but not reflected in the verse assonance.

The dialect of the text differs slightly from the ancestor of Standard French. To ensure philological fidelity, the following dialectal features are modelled in the reconstruction:

- No palatalization of [k], [g] before [a] (cf. Pope 1952: §1320). The texts shows a mixture of forms, e.g. *Charles*, *Carles*, *Karles*; *ch* can also represent [k].

- No diphthongization of Vulgar Latin ['o] > ['ow] /__$. The diphthong may have flattened early (cf. Pope 1952: §1326) or may never have existed; it assonates with [u] from all other sources.

- No differentiation of [ej] > [oj]. This both a dialectal and an archaic feature.

The use of the *u* grapheme for both [u] and [y] is typical of the Anglo-Norman scripta and does not indicate a phonemic merger, since the vowels are distinct in assonance.

Author contact details

Thomas M. Rainsford
Universität Stuttgart
Institut für Linguistik/Romanistik
Keplerstr. 17
Stuttgart, 70197
Germany

thomas.rainsford@ling.uni-stuttgart.de

References

BFM - Base de Français Médiéval [online]. 2019. Lyon: ENS de Lyon, Laboratoire IHRIM, http://txm.bfm-corpus.org (6 April, 2020).

Côté, Marie-Hélène. 2011. Final consonants. In Marc van Oostendorp et al. (eds), *The Blackwell companion to phonology. Vol. 2: Suprasegmental and prosodic phonology*, 848–872. Malden, MA: Wiley-Blackwell.

Dell, François. 1995. Consonant clusters and phonological syllables in French. *Lingua* 95. 5–26.

Fouché, Pierre. 1952–1961. *Phonétique historique du français*. Paris: Klincksieck.

Gess, Randall, Haike Jacobs & Bernard Laks. In press. Évolution depuis l'ancien français. In Marchello-Nizia et al. (in press).

Hayes, Bruce. 1995. *Metrical stress theory: principles and case studies*. Chicago: University of Chicago Press.

Jacobs, Haike. 1993. The phonology of enclisis and proclisis in Gallo-Romance and Old French. In William J. Ashby et al. (ed.), *Linguistic perspectives on the Romance Languages: selected papers from the 21st linguistic symposium on Romance languages (LSRL XXI), Santa Barbara, 21–24 February 1991*, 149–164. Amsterdam: Benjamins.

Jacobs, Haike. 1994. Catalexis and stress in Romance. In Michael L. Mazzola, *Issues and theory in Romance linguistics: selected papers from the linguistic symposium on Romance Languages XXIII, April 1–4, 1993*, 49–67. Washington, D.C.: Georgetown University Press.

Loporcaro, Michele. 2015. *Vowel length from Latin to Romance*. Oxford: Oxford University Press.

Marchello-Nizia, Christiane. 2015. De JE à J' en français: étapes vers l'élision, interactions entre phonétique et syntaxe. *Diachroniques* 5. 17–43.

Marchello-Nizia, Christiane, Sophie Prévost, Bernard Combettes & Tobias Scheer. In press. *Grande Grammaire Historique du Français*. Berlin: de Gruyter.

Meigret, Louis. 1550. *Le Trętté de la Grammęre Françoęze*. Paris: C. Wéchel.

Moignet, Gérard (ed. and trans.). 1972. *La Chanson de Roland: Texte établi d'après le manuscrit d'Oxford*. Paris: Bordas.

Morin, Yves Charles. 2003. Syncope, apocope, diphtongaison et palatalisation en galloroman: problèmes de chronologie relative. In Fernando Sánchez Miret, *Actas del XXIII Congreso Internacional de Lingüística y Filología Románica: Salamanca, 24–30 septiembre 2001.*, vol. 1, 113–169. Tübingen: Niemeyer.

Morin, Yves Charles. 2008. Histoire interne du français: histoire des systèmes phonique et graphique du français. In Gerhard Ernst et al. (eds), *Romanische Sprachgeschichte: ein internationales Handbuch zur Geschichte der romanischen Sprachen*, vol. 3, 2907–2926. Berlin: de Gruyter.

Nespor, Marina. 1993. *Fonologia*. Bologna: Il Mulino.

Palsgrave, John. 1530. *Lesclarcissement de la langue francoyse*. London: Richard Pynson.

Pigott, Glyne L. 1999. At the right edge of words. *The Linguistic Review* 16(2). 143–185.

Pope, Mildred K. 1952 [1934]. *From Latin to modern French with especial consideration of Anglo-Norman: phonology and morphology*. Manchester: Manchester University Press.

Rainsford, Thomas. 2011. *The Emergence of Group Stress in Medieval French*, Cambridge: University of Cambridge doctoral thesis, https://doi.org/10.17863/CAM.16503 (22 June, 2020).

Rainsford, Thomas. 2014. Sur la disparition de l'enclise en ancien français. In Wendy Ayres-Bennett & Thomas Rainsford (eds), *L'Histoire du français. État des lieux et perspectives*, 21–44. Paris: Garnier.

Rainsford, Thomas & Christiane Marchello-Nizia (eds). 2018. *Vie de saint Alexis*. Lyon: ENS de Lyon, http://catalog.bfm-corpus.org/AlexisRaM, (6 April, 2020)

Rainsford, Thomas. 2020. Table of transcribed forms for: "Syllable Structure and Prosodic Words in Old French", https://doi.org/10.18710/XYMXPC, DataverseNO, v. 1 (22 June, 2020)

Ségéral, Philippe & Tobias Scheer. In press. Phonétique historique. In Marchello-Nizia et al. (in press).