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Romance Languages and Linguistic Theory 2003.

Selected papers from 'Going Romance' 2003, Nijmegen, 20-22 November.

ROMANCE LANGUAGES AND
LINGUISTIC THEORY 2003

SELECTED PAPERS FROM
'GOING ROMANCE' 2003,
NIJMEGEN, 20-22 NOVEMBER

Edited by

TWAN GEERTS
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INTRODUCTION

The annual *Going Romance* conference is an international initiative of the Dutch university community involved in research on Romance languages. In the last two decades of its existence, it has developed into the major European discussion forum for theoretically relevant research on Romance languages where current ideas about language in general and about Romance languages in particular are tested. Starting with the thirteenth conference held in 1999, the proceedings volumes, entitled *Romance Languages and Linguistic Theory*, contain the selected papers of the conferences which are organized and held at various universities of the country.

This is the fifth volume, containing a selection of papers that have been presented at the seventeenth *Going Romance* conference, which was held at the Radboud University Nijmegen from 20-22 November 2003. Younger than its American sibling, the annual *Linguistic Symposium on Romance Languages*, the *Going Romance* conference is highly comparable to it, except that in previous issues *Going Romance* balanced more and more to syntax and less and less to phonology. In accordance with our wish to make phonology a more important part of *Going Romance* XVII, the three day program included a workshop on "Diachronic Phonology" and proudly listed Morris Halle as a key-note speaker.

The present volume reflects the restored balance and contains a broad range of articles dealing not only with syntax and phonology, but also with morphology, semantics and acquisition of the Romance languages.

We would like to thank everyone who contributed to the success of the 17th edition of *Going Romance*. We would like to thank the Rector of the Radboud University, Cees Blom, for his kind acceptance to deliver the opening address. We take great pleasure in singling out Maja Ciumak and Agnieszka Gasior, who helped us with all kind of organizational matters and to whom we express our great gratitude. Finally, we would like to thank Monique Burggraaf for last-minute help in preparing the indexes.

Besides one of the editors, the organization committee consisted of Reineke Bok-Bennema (Groningen), Frank Drijkoningen (Utrecht), Aafke Hulk (Amsterdam), Brigitte Kampers-Mahne (Groningen), Johan Rooryck (Leiden) and Henriëtte de Swart (Utrecht).

The editors would like to express their warmhearted thanks to the following individuals who have helped establishing the program by evaluating the more than 70 received abstracts and/or by reviewing and selecting the papers in this volume:

Reineke Bok-Bennema, Olga Borik, Onno Crasborn, Jenny Doetjes, Frank Drijkoningen, Andrzej Dubina, Paula Fikkert, Randall Gess, Carlos Gussenhoven, Marco Haverkort, Bart Hollebrandse, Angelique van Hout, Aafke Hulk, Yves D'Hulst, Brigitte Kampers-Mahne, Gert-Jan Postma, Josep Quer, Tobias Scheer, Jan Schroten, Philippe Ségéral, Petra Sleeman, Marianne Starren, Henriette de Swart and Jeroen van de Weijer.

Finally, we gratefully acknowledge the generous financial support from the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Netherlands Organization for Scientific Research (NWO).

Nijmegen, October 2005

Twan Geerts
Ivo van Ginneken
Haike Jacobs

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**AN INTEGRATED APPROACH TO VARIATION IN OT
EVIDENCE FROM BRAZILIAN PORTUGUESE AND PICARD**

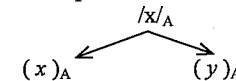
WALCIR CARDOSO
Concordia University

1. Introduction

This paper proposes an integrated approach for the analysis of “variation” in Optimality Theory in its broadest sense: it accounts for variation that occurs within a single prosodic domain (1a) as well as the type of variation that operates across domains (1b). While the former is variable and triggered by linguistic and extralinguistic factors (and is thus the subject of sociolinguistic investigation), the latter is invariable and strictly determined by prosodic domains. This is illustrated in (1), where A and B designate prosodic domains, and *x* and *y* indicate the output forms of an input segment /*x*/ that exhibits alternations:

(1) Two types of “variation”:

a. Domain-specific variation:



b. Across-domain variation:



For the analysis of these two types of “variation”, I adopt the framework of Optimality Theory (OT) (Prince & Smolensky 1993). One of the advantages of this framework is that it allows us to account for domain-driven and sociolinguistic variation within a language by means of a single grammar. In the context of domain-sensitive phenomena (1b), this can be accomplished by the decomposition of constraints into their domain-specific counterparts, each of which may be ranked independently within a single grammar to yield the alternations observed across domains. Based on this line of research and influenced by insights from Prosodic Phonology (Selkirk 1972, 1997, and Nespor & Vogel 1986), I propose an approach to the decomposition of constraints in which only prosodic domains may serve for constraint specification. I argue that this is advantageous because it constrains the grammar by imposing limitations on the types of domains that may be subject to decomposition, and captures Prosodic Phonology’s view that the interface between phonology and morphosyntax must be indirect, that is, mediated by domains from the prosodic hierarchy. In the

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WHAT LENITION AND FORTITION TELL US
ABOUT GALLO-ROMANCE
MUTA CUM LIQUIDA

TOBIAS SCHEER & PHILIPPE SEGERAL

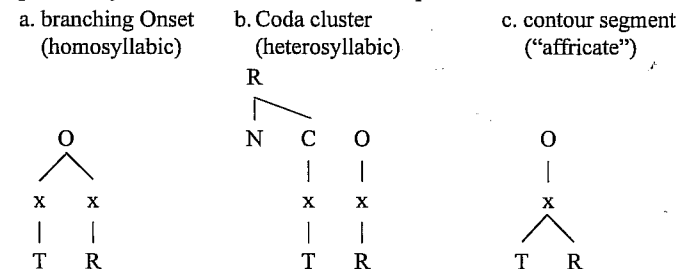
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1. *Introduction*

Obstruent-liquid clusters are a classical object of study in approaches of all theoretical orientations. They raise interest in all quarters because they are double agents: *muta cum liquida* sometimes pattern with single consonants, while at other times going along with the notorious Coda-Onset sequences RT, TT and RR.¹ Theories have always tried to assign a uniform syllabic representation to TR clusters, which are supposed to be fundamentally homosyllabic. In this view, different syllabic identities can only come into being through an extra operation performed on the default value.

The three representations under (1) are candidates for the representation of *muta cum liquida*. All of them have been advocated in the literature.

(1) possible syllabic identities for *muta cum liquida*



Contrary to the dominant analysis which accepts a homosyllabic default, we believe that the objects under (1) are recorded in the lexicon as such: there is no computation transforming one into another. Also, the three structures at hand, while phonetically identical, can co-occur in the same language. Finally, their distribution within a given system appears to follow certain positional regularities:

¹ T is shorthand for obstruents, R for sonorants. For expository reasons, we refer to the set of RT, TT and RR sequences as Coda clusters in the remainder of the article.

(1c) likes the Strong Position (i.e. occurs either word-initially or after Codas), while (1a) is rather found intervocally. In this article we concentrate on the first issue, arguing that there is no default. We only briefly touch on the two latter questions, which call for further study. In any event, we submit that *muta cum liquida* betray their syllabic identity when evidence regarding their behaviour is measured with the positional meter: in quite some cases, lenition and fortition will tell us who is who when coming across a TR cluster, and also offer a line of explanation.

(1a) is the structure that classical syllabification algorithms produce for TR sequences. In the generative tradition that goes back to Kahn (1976), mainstream theory has assumed that the lexicon contains unsyllabified strings of segments, which are assigned syllable structure in the computational chamber of the phonology. The backbone of all syllabification algorithms is the so-called Maximal Onset Principle, which nowadays features in all textbooks (e.g. Spencer 1996:88ss, Gussenhoven & Jacobs 1998:151ss, Roca 1994:151ss): make the Onset as big as you can, and put up the remaining segments in Codas. "As you can" means "as long as sonority increases within the branching Onset". This makes sure that a V_1TRV_2 sequence will always come out as $V_1.TRV_2$.

If a specific pattern in some language shows that V_1 stands in a closed syllable, the original syllabification needs to be undone by some rule (or constraint), and the T reinterpreted as the Coda of V_1 . In doing so, it may either preserve its association to its original Onset, in which case it is "ambisyllabic", or it departs completely from its original constituent. The operation at hand is called Coda Capture; it is a typical generative mechanism implemented in various flavours since Kahn (1976) (Harris 1999 provides an overview).

The fact that syllabification algorithms have an in-built (1a)-generator corresponds to the unmarked character of homosyllabic TR (where unmarked means "most frequent").² Therefore, it is argued, (1a) is the "true" identity of TR, from which all other structures are derived only in case of need.

Against phonological mainstream (embodied since a decade by Optimality Theory where markedness is even more central), we do not believe that theories ought to encode what is frequent and what is not. Frequency is irrelevant. Rather, theory ought to describe what a possible grammatical system is (e.g. Lass 1984:278s, Newmeyer 1998).³ Therefore, neither of the structures under (1) is

² This is indeed what appears when TR clusters are looked at through Indo-European glasses. If these are removed, however, a slightly different picture emerges. For example, in many languages *muta cum liquida* are instances of (1b): this is the typical Semitic pattern.

³ Note that this does not mean that we reject markedness altogether. Only the most commonly used aspect of markedness, frequency, is irrelevant for theory. We believe that functional markedness, on the other hand, needs to be reflected in theoretical terms: if structure X implies the existence of structure Y while the reverse is not true, structure Y is more fundamental, and should be recorded in the theory as such. Brandão de Carvalho (1994, 2002a,b) elaborates on this issue.

more fundamental or more "real" than any other. Hence Coda Capture is out of business: none of the structures under (1) is transformed into any other. If any one occurs in a language, it is present since the lexicon. There is also a theory-specific reason to reject Coda Capture: in Government Phonology, the theory that we endorse (see below), syllable structure is recorded in the lexicon, and there is no computational mechanism that builds or modifies constituents.

TR clusters have also been advocated to represent (1c). This was either done on language-specific grounds (Hirst 1985, Steriade 1994), or with a more general ambition (Rennison 1998, Rennison & Neubarth 2003, Lowenstamm 2003).

As far as we can see, however, it has never been argued that (1b) is the unmarked, true or otherwise favoured syllabification of TR clusters.

In sum, thus, our purpose is to show that (1a), (1b) and (1c) exist in nature; any of these structures can cohabitate within the same language, and neither is more fundamental than any other. Phonetic information is sufficient in order to discover the syllabic identity of Coda clusters (RT, TT, RR). It does not buy us anything when we come across a TR sequence. *Muta cum liquida* betrays its syllabic identity only through its phonological behaviour. We argue that looking at relevant evidence through the positional prism reveals individual identities of TR clusters: a theory of lenition and fortition may shed light on their syllabic status that otherwise remains inconclusive.

The Gallo-Romance playground is especially well suited for the illustration of the chameleon-like behaviour of TR clusters: the trouble that they cause is well documented since the 19th century. In section 3, we first recall one central piece of evidence which has caused a lot of (inconclusive) debate: the *colubra* paradigm, where the TR cluster of the last syllable in some respects behaves as a homosyllabic item, while in others shows heterosyllabic behaviour.

Another case of obstruent-sonorant clusters is reviewed next (section 4): C+yod (e.g. *rabia* > *rage*).⁴ Here, we argue that the only possible analysis is heterosyllabic for all clusters, including those where the obstruent is dental or velar (Scheer & Ségéral 2001b).

Finally, we turn to another well-known issue of the evolution of French: the *cam(e)ra* paradigm where epenthesis has occurred (> *chambre*) (section 5). This phenomenon is usually absent from the discussion of the status of Gallo-Romance TR clusters, a fact that may reasonably surprise since it creates new TR units. We show that in this case *muta cum liquida* must be contour segments (1c). The insertion of a stop is not a reaction against some "bad" contact between two sonorants. Rather, it is the result of a positional effect: [r] strengthens to the

⁴ Even though C+yod clusters are not exactly an instance of *muta cum liquida*, they are also assumed to represent branching Onsets by default. In Modern French for instance, they behave as homosyllabic items.

affricate (1c) [br] because it has come to stand in a Strong Position, thanks to syncope.⁵

The possible cohabitation of monoperpositional TR clusters (1c) with the two other options (1a) and (1b), then, paves the way for a uniform account of various phenomena that appear to be unrelated at first sight: the "spontaneous" metathesis of liquids (e.g. temp(e)rare > *tremper*) and the appearance of "parasitic" [r] (e.g. viticula > *vrille*).

As a result, then, Gallo-Romance has accommodated certain TR clusters that are necessarily heterosyllabic (1b) (C+yod), while others must instantiate affricates (1c) (epenthesis: cam(e)ra > *chambre*). Finally, a third group of *muta cum liquida* that was present in the language shows wavering homo- and heterosyllabic behaviour (the *colubra* paradigm).

Before entering the actual demonstration, however, section two exposes the general frame of our analysis.

2. CVCV and the Coda Mirror

2.1 Adjacency vs. positional effects: the fate of Latin obstruents in French

The evolution of Latin consonants in French is shown in (2) (e.g. Pope 1952:96, Bourciez & Bourciez 1967:147).⁶

(2)	a. #_ : word-initial		b. Coda_ : post-consonantal	
p	porta	porte	serpente	serpent
b	bene	bien	herba	herbe
t	tela	toile	cantare	chanter
d	dente	dent	ardore	ardeur
k	cor	cœur [k]	rancore	rancœur [k]
	cera	cire [s]	mercere	merci [s]
	*capu	chef [ʃ]	arca	arche [ʃ]

⁵ Here and henceforth, we use the plastic term *affricate* in order to refer to monoperpositional contour segments (1c).

⁶ Vowels that are lost at some (early) stage of the evolution appear in brackets, those that bear stress are underscored (vowel length is not indicated). Words are spelt. Latin and French <c> is [k], Latin <ph> is [f]. In each column, the Latin forms precede their French reflexes.

Glosses for table (2), a) #_ "door, well, cloth, tooth, heart, wax, head, mouth, people, leg, hunger, destiny, king, moon, sea, nose, wine, war, game"; b) C_ "snake, grass, to sing, ardour, rancour, thanks, arch (of a bridge), anxiety, silver, rod, hell, to pour, earth, room, blackbird, loft, weapon, horn, mallow, little tower, rage"; c) Coda _C "road, elbow, plane (tree, dialectal), root, done (fem), rigid, burden, Stephen, flee, beard, dawn, leg, to sing, to swim"; _# "wolf, head, where, I drink, husband, naked, friend, we, to have, to love, thread, bottom (human), hunger, no, ox, May"; d) V__V "past participle to know, shore, sky, broad bean, life, tail, to rent, free time, to pay, August, non-believer, outside, thing, pear, canvas, to love, moon, peacock, to wash, jackdaw, groove".

(2)	a. #_ : word-initial		b. Coda_ : post-consonantal	
g	gula	gueule [g]	angustia	angoisse [g]
	gente	gent [ʒ]	argentu	argent [ʒ]
	gamba	jambe [ʒ]	virga	verge [ʒ]
f	fame	faim	infernu	enfer
s	sorte	sort	versare	verser
r	rege	roi	terra	terre
			cam(e)ra	chambre
l	luna	lune	mer(u)la	merle
			cum(u)lu	comble
m	mare	mer	arma	arme
n	nasu	nez	cornu	corne
B	vinu	vin	malva	mauve
w	*werra	guerre	*skarwahta	échauguette
j	jocu	jeu	rabja	rage

	c. Coda		d. V__V: intervocalic			
	_C	_#				
p	rupta	route	lup(u)	loup / leu	*saputu	OFr. sêu
			*cap(u)	chef	ripa	rive
b	cub(i)tu	coude	ub(i)	où	*nuba	nue
			bib(o)	OFr. boif	faba	fève
t	plat(a)nu	plane	marit(u)	mari	vita	vie
d	rad(i)cina	racine	nud(u)	nu	coda	queue
k	facta	faite	amic(u)	ami	locare	louer
					licere	loisir
					pacare	payer
g	rig(i)da	raide			*agustu	août
	sagma	somme			paganu	païen
f	steph(a)nu	Etienne			deforis	dehors
s	musca	mouche	nqs	nous [nu]	causa	chose [z]
r	barba	barbe	haber(e)	avoir	pira	poire
			amar(e)	aimer		
l	alba	aube	fil(u)	fil	tela	toile
			cul(u)	cul		
m	gamba	jambe	fam(e)	faim	amare	aimer
n	cantare	chanter	non	non	luna	lune
B	nav(i)gare	nager	bov(e)	bœuf	pavone	paon
					lavare	laver
w					*cawa	OFr. choue
j			maj(u)	mai	raja	raie

The philological underpinning of this evolution is discussed at greater length in Ségéral & Scheer (2001a). The raw data may be recast in a synoptic table as under (3).⁷

(3)	Strong Position		Coda		intervocalic
	a. #__	b. Coda__	c. internal __C	d. final __#	e. V__V
p	p	p	∅	∅/f	∅/v
b	b	b	∅	∅/f	∅/v
t	t	t	∅	∅	∅
d	d	d	∅	∅	∅
k	k/s/ʃ	k/s/ʃ	I	∅	∅/I/ʲz
g	g/ʒ	g/ʒ	I/U		∅/I
f	f	f	∅		∅
s	s	s	∅	∅	z
r	r	r/EPENTH.	r	∅/r	r
l	l	l/EPENTH.	U	∅/l	l
m	m	m	~∅	~∅	m
n	n	n	~∅	~∅	n
B	v	v	∅	∅/f	∅/v
w	g	g			U
j	ʒ	ʒ		I	I

The following regularity may be read off table (3): the five relevant positions divide into two major groups, one where the French result is either identical with the Latin input, or has been strengthened. This is what happens to word-initial and post-consonantal consonants. On the other hand, the reflex of Latin consonants in both Coda positions as well as intervocalically is unchanged at best. If any variation is encountered, the output is weaker.

This is the reason why Romanicists, since the 19th century, have classified the relevant contexts into strong and weak positions as under (4).

The attentive reader will have noticed under (3) that there are two cells which do not appear to observe this regularity: depending on the melodic environment, [k] and [g] are either maintained or appear as palatalised fricatives even in Strong Position. However, although the French result is objectively weaker than the Latin input, there is a differential between the strong and the weak position: for a given melodic environment, the result is always stronger word-initially and after consonants than in the three weak positions: Lat. k produces [s] before Lat. e and [ʃ] before Lat. a in the Strong Position, but only a

⁷ Upper case I, U indicate that the segment in question has "imploded", leaving a palatal (I) or a velar (U) trace on neighbors. "~∅" means that the nasal consonant has been lost in the modern language, but left a nasal trace on the preceding vowel: this is where the characteristic modern alternations *bon* [bɔ̃], *bonté* [bɔ̃te] vs. *bonne* [bɔ̃n] "good, id. noun, id. fem" come from: VN > V[+nas] / __{C,#}, against VN > V[-nas]N / __V.

palatal reflex on neighbouring segments (represented as I under (3)) or nothing at all is found elsewhere (Lat. g also follows this pattern).

(4) the positional regularity

Strong Position		Weak Position		
a. #__	b. C__	Coda		
		c. __C	d. __#	e. V__V
result: ≥ original segment: integrity or [max.] strengthening (fortition)		result ≤ original segment: weakening (lenition) or [max.] integrity		
STRENGTH		WEAKNESS		

We may therefore conclude that the positional regularity is not challenged. Only is it relative, rather than absolute: all (melodic) things being equal, the French reflexes of Latin consonants in the Strong Position are *always* stronger than in weak positions. Or, in other words, there is a natural hierarchy among the two kinds of processes: whatever the melodic influence, it can never produce a result that violates the positional regularity.

Along the same lines, we may observe yet another fact: some diachronic processes under (3) are exclusively due to lenition and fortition: no melodic parameter has any bearing on the result. On the other hand, there are cases where the French output has been produced by the conjoint influence of positional and melodic forces. But there is no case on record where the fate of a Latin consonant depends exclusively on its melodic environment: melodic effects are unmistakably paired with a positional differential.

2.2 *Strong positions enjoy a uniform identity: the Coda Mirror*

The evolution of Latin obstruents in French is just one piece of evidence for the Strong Position {#C}__; more material is exposed in Ségéral & Scheer (2001a) and Scheer (2004:§110). In its face, the challenge for phonological theory is twofold.

(5) challenges raised by the Strong Position {#C}__

- the Strong Position is disjunctive. As was the case with the Coda context __{#C} in the late 70s, phonological theory must be able to reduce the disjunction to a unique phonological object.
- the Strong Position and the Coda are opposite in both structural description and effect: {#C}__ produces strength, while __{#C} promotes weakness. This can hardly be accidental. Therefore, an adequate theory must not only reduce {#C}__ to a non-disjunctive reality, but this reality must also be in some way opposite to the phonological identity of the Coda.

The familiar syllabic arborescence is unable to meet (5a), not to mention (5b). Consonants may belong to either Onsets or Codas. Onsets occur in three

environments: word-initially #__, after Codas C.__ and intervocalically V__V. The Strong Position, however, explicitly excludes the latter context: intervocalic consonants are weak. Therefore, regular syllable structure is able to characterise the Strong Position as a single (i.e. non-disjunctive), but not as a unique phonological object (i.e. different from all others). In other words, it is unable to account for the regularity at hand.

We argue in Ségéral & Scheer (2001a) that this obstacle may not be overcome unless the familiar syllabic arborescence is abandoned. An alternative approach to syllable structure is Government Phonology (Kaye et al. 1990, Kaye 1990, Charette 1991, Harris 1994), where syllabic generalisations are expressed by lateral relations among segments (this is the core of the theory: lateralisation of structure and causality, see Scheer 2004:§165). A recent development of this line of thought is so-called CVCV, which takes the lateral strategy to its logical end: constituency boils down to a strict sequence of non-branching Onsets and non-branching Nuclei.⁸ Table (6) shows the representation of some basic phonological objects in CVCV.⁹

(6)	closed syllable	geminate	long vowel	[...C#]	Coda-Onset sequence
	O N O N	O N O N	O N O N	... O N	O N O N
	C V C ∅	C V	C V	C ∅	R ∅ T V

On this analysis, syllable structure is a function of two lateral forces: Government and Licensing, which are defined as under (7).¹⁰

- (7) Government and Licensing are antagonistic forces
- Government inhibits the segmental expression of its target.
 - Licensing enhances the segmental expression of its target.

As in Standard Government Phonology, empty Nuclei play a central role in the definition of basic syllabic objects. The conditions under which empty Nuclei may occur are defined under (8).¹¹

⁸ CVCV is more carefully introduced in Lowenstamm (1996), Scheer (1999,2004), Ségéral & Scheer (2001a) and Szigetvári (1999,2001).

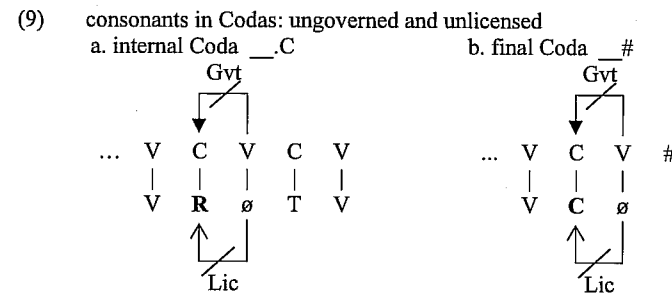
⁹ (6) notwithstanding, we continue using the familiar syllabic vocabulary for the sake of exposition: branching Onset, Coda cluster, open syllable, closed syllable and so forth. In all cases, we actually refer to the representations under (6). Also, the role of the skeleton appears to be redundant when CVCV is assumed: since nothing branches anymore and in absence of conflicting evidence, there is a one-to-one relationship between constituents and skeletal slots. Therefore, the skeleton does not appear in representations anymore. We might, however, refer to it informally in its familiar sense as a timing unit.

¹⁰ Note that these definitions do not exist in order to suit the particular analysis presented here: they have more general value (Ségéral & Scheer 2001a, Scheer 2004:§§125,135).

- (8) Empty Category Principle
- a Nucleus may remain phonetically unexpressed iff it is
 - a. governed or
 - b. domain-final (word-final)

Every contentful Nucleus can dispense Government and Licensing. Word-final (domain-final) empty Nuclei enjoy a special status, which reflects the well-known fact that the right edge of the word is peculiar.¹²

We are now in a position to introduce the Coda Mirror (Ségéral & Scheer 2001a, Scheer 2004:§§110,556). Consider first the situation of both internal and final Codas, which is depicted under (9).



As may be seen, Coda consonants are followed by an empty Nucleus. This is what the Coda context “word-finally and before a (heterosyllabic) consonant” reduces to in CVCV. The identity at hand is as non-disjunctive as the familiar arboreal solution which recurs to the constituent “Coda”: of all possible consonantal positions, only two meet the description “before an empty Nucleus”: __{#,C}.¹³

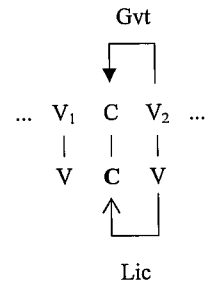
Intervocalic consonants for example are different because they precede a phonetically expressed vowel. Their situation is shown under (10).

¹¹ A third proviso concerning homosyllabic TR clusters is not mentioned under (8): Infrasegmental Government. Since it is orthogonal to the discussion in the present article and would require quite some space in order to be exposed, we do not go into any further detail. A more careful introduction is available in Scheer (1999, 2004:§14).

¹² In particular, it allows for heavy consonant clusters, something that is usually dealt with by extrasyllabicity (see Scheer 2004:§339 on this notion and its relation with CVCV). Like extrasyllabicity, thus, the properties of the right edge of the word (i.e. of final empty Nuclei) are subject to parametric variation (see Scheer 2004:§524).

¹³ This statement needs to be slightly refined when TR clusters (branching Onsets) are taken into account: Coda consonants then occur “before *governed* empty Nuclei” only. This difference is discussed at length in Scheer (1999,2004:§14).

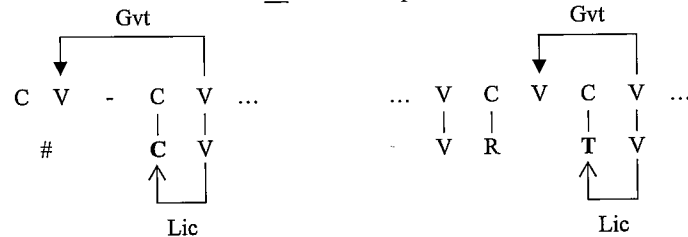
(10) intervocalic consonants: governed and licensed



Intervocalic consonants are both governed and licensed: their Nucleus V_2 is contentful and hence has both governing and licensing abilities. Since V_1 , the Nucleus preceding intervocalic consonants, is phonetically expressed as well, V_2 has no governing duties to observe. Hence it exhausts both its governing and licensing abilities on its own Onset.

The last category of consonants are those that occur in the Strong Position $\{\#,C\}_$, i.e. word-initially and after Codas. Their representation under (11) includes the idea that the phonological identity of the beginning of the word is an empty CV unit. We come back to this equation “# = CV” shortly.

(11) consonants in Strong Position: ungoverned but licensed

a. word-initial consonant $\#_$ b. post-Coda consonant $C_$ 

On this analysis, a consonant in Strong Position in fact occurs after an empty Nucleus: all and only those consonants that appear in $\{\#,C\}_$ are preceded by an empty Nucleus. The disjunction that characterises the Strong Position has thus been reduced to a non-disjunctive statement.

As a consequence of this situation, the contentful Nucleus that follows the consonant in strong position has a governing duty to observe: it must silence the empty Nucleus that precedes the strong consonant. Since its governing ability is bound, thus, its own Onset, the strong consonant, remains ungoverned - hence undamaged. Licensing applies as before, which produces an overall situation where strong consonants are ungoverned but licensed.

Let us now have a closer look at the “initial CV”. Lowenstamm (1999) has introduced the idea that the phonological identity of the beginning of the word is

an empty CV unit. We follow this line of reasoning. In the context of (11), the initial CV may appear to serve the only purpose of creating the unity of the post-consonantal and the initial location. This impression, however, arises only when looking at (11) out of context: the initial CV is but one aspect of a more general approach to the representation of morphological information in phonology (Scheer 2004:§§83, 402, forth). Traditional diacritics such as “#”, “+” and the like do not qualify as linguistic objects. At best, they are placeholders for a linguistic reality that phonologists do not understand. Given the modular character of grammar and the fact that phonology does not speak the same language as higher modules (phonology does not know what “case” or “animate” is, no other module can interpret “labial”, see Jackendoff 1997), morpho-syntactic information must somehow be translated into the phonological language in order for phonology to be able to parse it. Diacritics are therefore out of business.

Also, diacritics do not make any prediction as to what may or may not happen at the beginning of the word: since they are arbitrary and unparseable by the phonology, anything and its reverse could be triggered by “#”. This, however, is not how natural language works. The beginning of the word has clearly identifiable and cross-linguistically stable effects: if it is any special at all (there are languages where the behaviour of the left edge of the word is not any different from the one that is observed word-medially), it provokes 1) a ban on #RT clusters (like in typical Indo-European languages: English, French etc.), 2) the strength of the initial consonant (as illustrated above) and 3) the stability of the first vowel of the word (in many languages, vowel deletion is blocked if the target vowel is the first vowel of the word).

When the object “#” is taken seriously, however, there is no reason why vowel deletion ($V \rightarrow \emptyset / \#C_C$), rather than vowel-insertion ($\emptyset \rightarrow V / \#C_C$), should be blocked word-initially. As a matter of fact, there are languages where vowels are inserted between two word-initial consonants - however, no language has been reported where the word-initial context triggers the deletion of the first vowel.

Scheer (2004:§83) discusses this issue at greater length, showing that the three non-arbitrary effects of the beginning of the word all follow from the existence of an empty CV unit that precedes the first consonant.

Let us now summarise the overall situation regarding the positional identity of consonants in CVCV.

(12)	position	usual name	phonological identification	lateral situation	segmental health
a.	#_V	word-initial	Strong Position = \emptyset _	licensed and ungoverned	splendid
b.	VC._V	post-Coda			
c.	V_.CV	internal Coda	Coda = _ \emptyset	unlicensed and ungoverned	unfavourable
d.	V_#	final Coda			
e.	V_V	intervocalic	= else-where	licensed and governed	unfavourable

It appears that the angle stone for the definition of syllabic positions are empty Nuclei: a consonant occurs in a Coda when it is *followed* by an empty Nucleus; it stands in the Strong Position in case it is *preceded* by an empty Nucleus; finally, it is intervocalic if it is not adjacent to any empty Nucleus.

As was mentioned earlier, both relevant disjunctions are reduced: the phonological identity of the Coda is “ \emptyset ”, the one of the Strong Position is “ \emptyset ”. Both requirements that have been identified under (5) are thus met: the Strong Position is a non-disjunctive and unique phonological object (5a), and it is exactly symmetric in regard of the Coda (5b). On account of this absolute symmetry in both structural description and effect, we refer to the Strong Position as the Coda Mirror.

But there is still one question remaining: causality. Why is the Coda weak and its mirror strong, rather than the reverse? The answer is contained in table (12): the relative strength of consonants is a function of the two lateral forces that act on them. Given that Government spoils the melodic content of its target while Licensing backs it up (see (7)), the most comfortable position for a consonant is certainly the Coda Mirror: this is where consonants escape spoliation (they are ungoverned), but enjoy support from Licensing. The Coda Mirror is thus certainly more inviting than either the Coda or the intervocalic position: in the former environment, consonants are neither spoiled nor supported, while they are both attacked and backed up in the latter. On the other hand, it is not immediately obvious how the two weak positions should be ranked: are you better off when experiencing neither damage nor support, or when you are subject to both? There is actually some reason to believe that the Coda is weaker than the intervocalic position, but this question does not need to be pursued here. We can simply note that Coda Mirror theory makes no firm prediction.

It is important, however, to understand that the Coda Mirror does make a clear distinction between both weak positions: they are distinct phonological objects. Being able to differentiate the Coda and the intervocalic situation while uniformly characterising their association as the Weak Position is actually another challenge raised by the empirical record: lenition sometimes affects only Codas (and sometimes even only half of it), but at other times produces the same effect on Codas and on intervocalic consonants. In any event, the empirical situation shows that there are two ways of being weak: some phenomena take place in intervocalic position, but are unheard of in Codas (e.g. the voicing of obstruents),

and vice-versa (e.g. devoicing). Ségéral & Scheer (2001a) and Scheer (2004:§131) enlarge on this issue.

Table (13) summarises the correlation between the two lateral forces and their effect.¹⁴

(13) Government, Licensing and their effect on consonants			
Licensing	Government	position	segmental health according to predictions
+	-	Coda Mirror	splendid
	+	V_V	unfavorable
-	-	Coda	unfavorable
	+	impossible	—

We are now prepared to look at TR clusters and the trouble they cause in Gallo-Romance.

3. The Gallo-Romance trouble with TR clusters: colubra

The trouble that TR clusters cause in general and in the evolution of Gallo-Romance in particular may be illustrated by a well-known set of data, which we call the *colubra* paradigm. Latin words that belong to this pattern are trisyllabic or longer and bear a TR cluster between the short penultimate and the final vowel. The size of this paradigm is relatively small: all grammars quote the same five items¹⁵: *colubra*, *cathedra*, *tonitru*, *integru*, *palpetra*. Six additional words whose modern reflexes suppose more intricate evolutions may be added: *tenebras*, **alacru* / **alecru*, *pullitru*, *-tra*, *feretru*, *podagru*, **taretra*, *-tru* / *taratru* (< Cl. Lat. *terebra*, Fr. *tarière*). The pool of words that we will work with below thus bears eleven items.

3.1 TR was already ambiguous in Latin

Words of the *colubra* class receive regular antepenultimate stress in classical Latin (*colubra*) according to the Latin stress rule “stress is antepenult unless the penultimate syllable is closed or bears a long vowel, in which case it is penultimate”.

However, it is to be noted that the behaviour of the TR cluster has already been ambiguous in Latin. This may be seen when looking at the reduction of short vowels in word-internal syllables, so-called internal apophony (Niedermann 1985:

¹⁴ Note that the fourth logically possible configuration (governed but unlicensed) is excluded on formal grounds: if an Onset is not licensed, its Nucleus must be empty. Therefore, it cannot be governed either since empty Nuclei are unable to govern. Scheer (2004:§543-545) discusses this issue in regard of the special properties of Final Empty Nuclei.

¹⁵ See for example Meyer-Lübke (1890:I.523), Vendryes (1902:94-fn.1), Nyrop (1904:I.161-162), Clédat (1917:2), Bourciez (1930:37), Elcock (1960:40), Pope (1952:100), Bourciez & Bourciez (1967:27), Fouché (1969:II.151-153), Lanly (1971:38-fn.1), Carton (1974:144), de La Chaussée (1974:164), Väänänen (1981:34), Niedermann (1985:16-17), Zink (1986:178-179), Allières (2001:20).

18-31). Internal apophony produces different results in open and closed syllables: in the former position, only high vowels i,u are found,¹⁶ while a only raises to e and o to u in the latter environment (where e remains unchanged). This may be illustrated by *facio* - *conficio* vs. *factus* - *confectus*. In the former case, the a which occurs in a word-initial syllable is raised to i in internal open syllable, while it is only taken to e in the closed syllable of the latter example.

This means that the medial vowel of the *colubra* paradigm (unless followed by r) should always be high: it occurs in an internal open syllable. This is indeed true for *tonitru* and *pullitra*. However, *cathedra*, *tenebras*, *palpetra*, *feretru* and *integru* show a mid vowel.¹⁷ The regular conclusion that needs to be drawn, then, is that the high vowels of the former two items are free, while the mid vowels of the five latter words occur in closed syllables. And, thus, that the following TR cluster is monosyllabic (1a) in two, but heterosyllabic (1b) in five cases.¹⁸

3.2 Self-contradictory evidence from the (Gallo-)Romance evolution of Latin TR clusters

TR clusters in the *colubra* paradigm also provoke ambiguous results diachronically. The evolution of Gallo-Romance offers four criteria that allow to

¹⁶ But before r where the result is always e: *inferus*, *numerus*, *legeris* (vs. *legitur*), *opus* / *operis*.

¹⁷ Some words of the *colubra* paradigm bear a short a in internal syllable, which appears to contradict the apophonic regularity: *alacre*, *podagru* and perhaps *taratru*. Short a is indeed sometimes maintained in internal syllables (Vendryes 1902:289-292 offers a list). Some cases are borrowings from Greek (for example *podagru*) where the original vowel has been taken over without modification. Another explanation that is commonly provided invokes a harmony effect whose origin is the initial vowel (Vendryes 1902:291, Maniet 1975:129, Niedermann 1985:30). It is noteworthy that these abnormal classical Latin words are paralleled by reflexes in individual Romance languages which suppose regularly apophonized forms: OFr. *haliegre*, it. *allegro* suppose **alecre* / -u; OFr. *tarietre* invites to think of **taretru*.

¹⁸ The syllabic ambiguity of TR sequences also appears in Latin scansion: it is well known that the quantity of the syllable which precedes *muta cum liquida* (*positio debilis*) has been, according to the period, short or "free", i.e. possibly long. Timpanaro (1965) offers more detailed discussion of this question.

In the literature, the variation in the the quality of short vowels in internal syllables before TR clusters is sometimes simply left unmentioned (Grandgent 1934; Palmer 1968; Monteil 1970). Elsewhere, the existence of apophonic e before *muta cum liquida* is admitted without indicating the contradiction with the general pattern (contrasting result in open and closed syllables) or the presence of counter-examples (of the kind *tonitru*) (Juret 1938:77, Niedermann 1985:29). Ernout & Meillet (1985: 695 s.u. tono) and Fouché (1969: 152 rq2), while trying to account for the "abnormal" vowel in *tonitru*, also fall into this category. On the other hand, Vendryes (1902: §344) does not make any reference to the syllable. According to him, the result is e simply "before consonant clusters", and he does not mention *tonitru* either. Finally, Meillet & Vendryes (1963:§193rq2, §202 and rq), Timpanaro (1965:1090 "nel latino preistorico la sillabazione del tipo *in-teg-rum* è per noi garantita dal vocalismo"), Maniet (1975:§57 rq2 and §10 rq2) and Väänänen (1981:§49) examine the question of apophonic e before TR clusters, conclude on the heterosyllabic status of the latter, but leave the *tonitru* pattern unexplained.

test their syllabic status. These are 1) stress shift, 2) the development of the preceding tonic vowel, 3) the evolution of the obstruent and 4) the evolution of the word-final vowel in case it is different from a.

Let us begin with the stress shift. It is a remarkable feature of the *colubra* paradigm that the vowel which was stressed in Latin is not tonic in Gallo-Romance anymore. Antepenultimate *colubra* has become penultimate **colobra* in late Latin¹⁹, a fact that follows from the Gallo-Romance reflex: the diphthong ue in OFr. *coluevre* (> Mod. Fr. [œ], cf. Lat. *cor* > OFr. *cuer*, Mod. Fr. *cœur*) is the regular result of Latin tonic short o.

Table (14) shows the evolution of the 11 relevant words.

(14)	stress shift		
a.	proparoxyton > paroxyton		
	<i>colubra</i>	> <i>*colobra</i>	OFr. <i>couluevre</i>
	<i>cathedra</i>	> <i>*cathedra</i>	OFr. <i>chaiere</i>
	<i>tenebras</i>	> <i>*tenebras</i>	OFr. <i>teniebles</i>
	<i>tonitru</i>	> <i>*tonitru</i>	OFr. <i>tonoire</i>
	<i>*taratru</i>	> <i>*taratru</i>	OFr. <i>tarere</i>
	<i>podagru</i>	> <i>*podagru</i>	OFr. <i>pouacre</i>
	<i>alacre</i>	> <i>*alecru</i>	OFr. <i>(h)aliegre</i>
b.	unshifted		
	<i>pullitra</i> , -tru	> —	<i>poutre</i> (but It. <i>puledro</i>)
	<i>feretru</i>	> —	OFr. <i>fietre</i>
c.	doublets		
	1. <i>palpetra</i> (Varr.)	> <i>*palpetra</i>	<i>paupière</i>
		> —	OFr. <i>paupres</i>
	2. <i>integru</i>	> <i>*integru</i>	<i>entier</i>
		> —	OFr. <i>entre</i>

(14a) illustrates the stress shift described. The two words under (14b), however, do not follow this pattern: the original Latin stress has been preserved in their Gallo-Romance reflexes. Finally, the two words under (14c) show both shifted and unshifted reflexes.²⁰

The situation thus seems confusing: stress has been shifted sometimes, but at other times remained stable. On the assumption that the stress-assigning algorithm is the same as in Latin (section 3.3 below reviews the relevant literature regarding this question), the TR cluster of shifted *colubra* items must be

¹⁹ See Bourciez (1930 : §72 rq.1) on the evolution open o < closed o (< Cl. Lat. tonic short u) before labials.

²⁰ Fouché (1966:153,629) argues for r metathesis in order to account for OFr. It. *entre*: *integru* > **intregu* (cf. Romanian *întreg*, Span. It. *integrar* < *integrare*). OFr. *paupres* < **palpretas* < *palpetras* may also be treated along these lines. In this case, stress indeed would have no reason to move. In any event, however, metathesis is out of the question for *pullitru* and *feretru*.

heterosyllabic: stress is penultimate if the penultimate syllable is closed. We are thus left with heterosyllabic *colub.ra* for late Latin.

The second test that indicates the syllabic status of *muta cum liquida* is the evolution of the preceding tonic vowel. Gallo-Romance regularly produces different results for tonic vowels in closed and open syllables (e.g. Bourciez & Bourciez 1967:48). Contrary to what might be expected when looking at the stress shift, the middle vowel of the *colubra* paradigm always shows the regular evolution of a tonic vowel in open syllables.

Tonic *a* remains unchanged in closed syllables (*parte* > *part*), but produces *e* in open syllables (*pratu* > *pré*). Both relevant members of the *colubra* paradigm, **taratru* > OFr. *tarere* and **alacru* > OFr. *alaigre*, follow the latter evolution. In the same way, tonic open *e* (< Lat. short *e*) comes out unchanged in closed syllables (*herba* > *herbe*), but diphthongises to *je* in open syllables (*pède* > *piéd*). And again, all words of the *colubra* paradigm that are concerned show the diphthong: **tenebras* > OFr. *teniebles*, **catedra* > OFr. *chaïere*, **integru* > *entier*, **alecru* > OFr. *haliegre*, **palpetra* > *paupière*. The situation for the back mid vowel is parallel: tonic open *o* (< Lat. short *o*) is handed down without modification in closed syllables (*morte* > *mort*), but produces the diphthong *we* in open syllables, which is represented by [œ] in Modern French (*mōla* > OFr. *muele*, Mod. Fr. *meule*). The only relevant representative of the *colubra* paradigm, *colubra* itself, shows the diphthong: **colobra* > OFr. *coluevre*, Mod. Fr. *couleuvre* [kulœvʁə]. Finally, tonic closed *e* (< Lat. short *i* and long *ee*) appears as *e* in closed syllables (*virga* > *verge*), but is represented by *wa* in open syllables (*pira* > *poire*, *teela* > *toile*). As before, the only relevant word of the *colubra* paradigm follows the open syllable pattern: **tonitru* > OFr. *tonoire*.

The result is thus unambiguous: all tonic vowels follow the evolution in unchecked syllables, hence supposing homosyllabic TR.²¹

The third criterion concerns the evolution of the obstruent within TR. For the reasons exposed in note 21, labial + lateral clusters [pl, bl] will be lain aside. For labials, we are thus left with sequences involving [r]. The argument here builds on the fact that the fate of labials varies according to whether they are Codas or occur in intervocalic position. In the former situation, they are lost altogether: *rupta* > *route*, *subtile* > OFr. *sotil*, *cub(i)tu* > OFr. *cote*, *code*. Intervocalically, on the other hand, they appear as [v]: *ripa* > *rive*, *faba* > *fève*, *capra* > *chèvre*, *lep(o)re* > *lièvre*, *labra* > *lèvre*. Hence the fate of the labial

²¹ TR clusters where T is labial and R lateral, i.e. [pl, bl], are misbehaving throughout the entire language: Lat. *fāb(u)la*, *cap(u)la* > *fable*, OFr. *chable* should bear an *e* instead of the unaltered *a*, and the stops should spirantize, which they do not: [pl] Lat. *duplu*, > Fr. *double*; [bl] Lat. *fāb(u)la*, *tāb(u)la*, > Fr. *fable*, *table* etc. Bourciez & Bourciez (1967:221) provide an obvious explanation for the deviant behaviour of [bl, pl]: the expected spirantized result, [vl], is "illegal" in French (the cluster does not occur in the language at all). Therefore, the constitution of a homosyllabic cluster was blocked.

indicates the syllabic status of the cluster: it will be lost in case the following [r] is heterosyllabic, but appears as [v] if [r] belongs to the same syllable.²²

The only item of the *colubra* paradigm that can be run against this record is *colubra* itself. And as before, the spirantised labial indicates that *muta cum liquida* here is homosyllabic.

Finally, the fourth criterion concerns the evolution of the final vowel, which in Gallo-Romance has survived only if it was Lat. *a* or occurred after a homosyllabic cluster. In this case, the reflex is a schwa (spelt *e*). Elsewhere, final Latin vowels are lost.²³

Compare for example *febre* > *fièvre*, *duplu* > *double*, *inflo* > *enfle* where *muta cum liquida* demands the presence of some vocalic substance to its right. By contrast, vowels other than *a* are lost altogether after RT (*ventu* > *vent*, *portu* > *port*, *arcu* > *arc*), RR (*caballu* > *cheval*, *ferru* > *fer*) and TT (*factu* > *fait*).

Analyses commonly appeal to the "heaviness" of TR clusters, as opposed to other sequences: the former, but not the latter, need a vocalic crutch in order to exist.²⁴ For the *colubra* paradigm, this means that a CCV# cluster must have been homosyllabic if the final vowel has survived into Gallo-Romance and was different from Lat. *a*. As a matter of fact, all relevant items of the *colubra* paradigm all appear with a final schwa in Gallo-Romance: *tonitru* > OFr. *tonoire*, *podagru* > OFr. *pouacre*, *alacre* > OFr. (*h*)*aliegre* / *alaigre*, *feretru* > OFr. *fiertre*, **taretru* > OFr. *tariédre* / *tarere*.²⁵ Hence the test offered by the evolution of the final vowel also hints at a homosyllabic status of the preceding TR cluster.

On the bottom line, thus, the only troublemaker appears to be the stress shift: not only is its result different from the one of the other tests; it is also ambiguous since the eleven items do not behave in uniform fashion. In contrast, the other three criteria provide a perfectly homogeneous result across the paradigm: TR clusters are homosyllabic.

The following section reviews possible interpretations of this situation.

²² Dentals are lost in Codas as well as in intervocalic position (see table (3)) and may therefore not be used in order to test the behaviour of dental TR clusters. The same holds true for velars: they usually "reduce to yod" in Codas as much as they do intervocalically (see table (3)).

²³ The detail is a little more intricate, but does not impact the present discussion (see Bourciez & Bourciez 1967:§13-15, Fouché 1966:502-506).

²⁴ This impairment is still visible in modern French: word-final TR clusters are unstable and very commonly lose their R: *autre*, *livre*, *ministre* are pronounced *aut'*, *liv'*, *minist'* (Dell 1973:224ss, 1976). By contrast, final RT sequences such as in *porte* [pɔrt], *larve* [larv] or *parc* [pɑrk] do not show any tendency towards cluster simplification.

²⁵ The reflex of **integru* > *entier* lacks the expected final schwa, even though schwa seems to be regular with velar TR clusters: *agru* > *aire*, *cicere* > OFr. *çoire*, *soçeru* > OFr. *suere*, *suire* (and most probably, against Fouché 1966:626s and Bourciez & Bourciez 1967:§116-H, the result of the infinitives *facere*, *legere*, *dicerere*, *ducere*, **bragere*, **ragere*, **coçere*, etc. > *faire*, *lire*, *dire*, *-duire*, *braire*, *raire*, *cuire*). Cases such as *nigru* > *noir* (not **noire*) (Bourciez & Bourciez 1967:§132 rq2) remain unclear (Fouché 1966:502 treats **integru* on a par with *nigru*).

3.3 *Solutions offered in the literature*

Recall from section 3.1 that TR clusters had already an ambiguous behaviour in Latin. We also know that the stress shift must be an early event in Gallo-Romance since it is supposed by all further evolutions such as diphthongisation. Therefore, a natural solution seems to be one where TR clusters switched back and forth between homo- and heterosyllabic periods: classical Latin V.TRV > late Latin VT.RV (stress shift) > (Gallo-)Romance V.TRV (other events). For instance, this is the analysis promoted by Loporcaro (in press) and Timpanaro (1965):

Se si ammette dunque per il latino arcaico e tardo l'eterosillabicità, si deve ricostruire un'evoluzione in quattro fasi : a. lat arcaico -VC.RV-, b. lat class. -V.CRV-, c. lat tardo/proto-rom. -VC.RV, d. lingue rom. -V.CRV-. (Loporcaro (in press:§3))

Piuttosto che ad una netta separazione tra una pronunzia popolare in-té-grum, mantenutasi dall'epoca preistorica fino al sorgere delle lingue romanze, e una pronunzia dotta in-te-grum, mantenutasi con altrettanta costanza almeno per tutta l'età classica, io credo a una prevalere ora dell'una ora dell'altra accentazione (in conseguenza di sillabazioni diverse) in diverse epoche. (Timpanaro (1965:1093ss))

According to this scenario, syllable structure is the motor of stress shift. Another approach, to be discussed below, argues that the movement of stress has got nothing to do with syllable structure. This appears to be the major fraction line in the literature regarding the *colubra* paradigm.

One version of the syllabic analysis supposes that *muta cum liquida* has been geminated: *colubra* > **colúbbra* > **colúbra*.²⁶ Stress being assigned as in Latin, the penultimate syllable receives regular stress in the geminated period since it is checked (Fouché 1969:152). Bourciez & Bourciez (1971:§6 rql) also favour a solution that implies gemination, but no chronological order of events: both types *colubra* (from the *sermo cotidianus*) and **colúbbra* (from the *sermo rusticus*) have coexisted and finally "merged" into **colúbra*.

Another option on the syllabic side is the emergence of an anaptyctic vowel. On this analysis, an epenthetic (or "parasitic") vowel has developed in the middle of *muta cum liquida*, taking *colubra* to **colobera*. The unchanged Latin stress rule then applied to the result, making it a proparoxyton: *colobera*. After the stress shift, the anaptyctic vowel has been lost like all other post-tonic internal vowels in Gallo-Romance. Vendryes (1902: 94 fn.1), who traces this solution back to Neumann (1896) and without adhering, says it is "une hypothèse fort ingénieuse" [a very clever hypothesis]. More recent defenders of the anaptyctic

²⁶ This is the "Italian" solution: TR clusters where T is labial come out geminated in Italian, e.g. *febbre* "fever" < *febre*, *fabbro* "smith" < *fābru*, *nebbia* "fog" < *neb(u)la*, *fibbia* "buckle" < *fib(u)la* (cf. Rohlfs 1966: §§247, 261), while simple intervocalic labials do not geminate (*faba* > *fava* "bean").

vowel are de Groot (1921), Richter (1934:45ss) and Niedermann (1985:16-17). At first sight anaptyxis may look like a *deus ex machina*: its only trace is the event that it is supposed to explain, i.e. the stress shift. Nevertheless, it seems appealing to us because it avoids oscillating syllabic interpretations of TR clusters while maintaining a direct causal relation between syllable structure and the stress shift. Furthermore, it has the advantage of directly correlating the effect observed and the salient property of TR clusters: *muta cum liquida* is unstable and therefore beaks up, developing a vocalic crutch.

The other family of explanations contends that the Latin stress rule has changed: it was syllable-sensitive in Latin, but became syllable-insensitive in Gallo-Romance. Pope (1952:100) formulates the new algorithm as follows: "the penultimate syllable is stressed whenever it contains a long vowel, a diphthong, or a vowel of any kind followed by any two consonants or a double consonant". The original Latin rule thus made a crucial difference between TR and RT clusters: CVCVTRV were proparoxytons, while CVCVRTV ended up as paroxytons. Since all items of the former pattern, i.e. the *colubra* paradigm, have become paroxytons as well, Pope correctly renders the new observational situation: the penultimate vowel is stressed when followed by *any two* consonants, no matter what their sonority slope.

This stance is expressed, with some minor variation in detail, by Ward (1951:484), Steriade (1988:399) and Bullock (2001). The latter author supposes a parallel and dissociated functioning of the syllabic and the prosodic world, something that she calls "double prosody". The basic claim here is that theory needs to recognise two separate levels of representation for syllable- and prosody-related phenomena, which sometimes may overlap (i.e. in Classical Latin), but at others times function separately (i.e. in Gallo-Romance: stress is syllable-insensitive, while syllable-related processes such as diphthongisation etc. obey syllabic conditioning).

Finally, Pulgram (1975:168-171) who also puts aside syllable structure, grounds the idea of a "general trend towards paroxytony". This scenario is mainly built on the loss of internal unstressed vowels (*lep(o)re* > *lièvre*, *tab(u)la* > *table* etc.) and the stress shift in certain proparoxytons (*muliere* > *muljere*). Lahiri et al. (1999) follow this line of thought: they argue that the Latin stress rule, being deprived of its empirical basis, could not survive and broke down.

It is certainly true that the various approaches which subscribe to a syllabic solution have this or that weak point. The alternative, however, merely records the observation as such. It certainly provides a correct description - but it does not attempt at looking behind the curtain: a view is admitted whereby all relevant processes of the language but one are conditioned by syllable structure - the stress shift. We believe that merely counting the consonants instead of evaluating their hierarchical relation is a form of capitulation in the face of adversity. It may get

the data right, but does not promote our understanding of either syllabic theory or Gallo-Romance.

But be that as it may: as was stated at the outset of the article, going through the classical case of *colubra* and the related stress shift only serves the purpose of evidencing the trouble with TR clusters in general, and in Gallo-Romance in particular.

Therefore, the most important result of the foregoing discussion is the fact that the syllabification of a TR cluster cannot be discovered by looking at its phonetic properties or its sonority slope - while RT, TT and RR clusters are always heterosyllabic no matter in which language they are found and what the local environment looks like. Only the behaviour of TR clusters will betray their syllabic value. Even within a given language, several patterns may cohabitate: the split of the *colubra* paradigm into those items where stress moves and those where it remains stable witnesses the syllabic ambiguity of *muta cum liquida*. Any account must somehow accommodate this fact. Hence a uniform analysis of TR clusters is ill-advised.

In the remainder of the article, we discuss two other instances of Gallo-Romance obstruent-sonorant clusters. Both show entirely unambiguous behaviour, but which calls for opposite analyses: Gallo-Romance C+j sequences, we argue, are necessarily heterosyllabic (1b), while *muta cum liquida* that is produced by epenthesis (*cam(e)ra* > *chambre*) represents an affricate (1c).

4. C+j sequences in Gallo-Romance

Latin short high and mid vowels have become glides in late Latin when occurring before a vowel. For example, trisyllabic *filia* “daughter” and *vidua* “widow” have been reduced to bisyllabic *fɪlja*, *vedwa*.

We have argued elsewhere (Scheer & Ségéral 2001b) that this glidification can only be understood if *all* C+j sequences are heterosyllabic. This analysis is commonplace for clusters involving labials: *rabia* > *rage* [ʁaʒ], *sepia* > *seiche* [sɛʃ], *cavea* > *cage* [kaʒ], *simiu* > *singe* [sɛʒ]. Nobody believes that the labial obstruent has been palatalised by the following yod: labials do not palatalise in Gallo-Romance, nor in any other language. Hence the solution is not melodic: no palatal agent penetrates into the labial. Rather than an assimilation, we face a positional phenomenon. That is, C+yod is heterosyllabic. Yod therefore occurs after a Coda, hence in the Coda Mirror. It strengthens for this reason, and only for this reason, [j] > ([tʃ], [dʒ] >) [ʃ, ʒ], just as much as it does in the other half of the Coda Mirror, i.e. word-initially: *jocu* > *jeu* [ʒø] (cf. (3)). The fate of the preceding labial confirms this analysis: like everywhere else in the language, it is lost in Coda position (*rupta* > *route*, *cub(i)tu* > *coude*, cf. (3)).

As far as dentals and velars are concerned, however, our analysis contrasts with the classical account. Since dentals and velars may be palatalised, it is commonly assumed that their evolution before yod is the result of a palatalisation: *montanea* > *montagne* [ɲ], *palea* > *paille* [paʎə] (Mod. Fr. [paj]). This scenario

leaves us with an identical triggering situation (C+yod), but two different causalities: positional in the case of labials, assimilatory as far as dentals and velars are concerned. The latter solution is taken to be the default, which labials do not follow because they are intrinsically non-palatalisable. C+yod being outlawed, another strategy, i.e. strengthening of yod, eliminates the offending sequence.

Contrary to this analysis, we believe that all developments of C+yod clusters are driven by the same motor: positional strength. Melodic contaminations of course exist, but they are secondary and opportunistic: they hook on the result of the positional mechanism, which is acquired in absence of any melodic influence. Due to space restrictions, we must refer the reader to Scheer & Ségéral (2001b) for the further detail.

If our analysis is correct, then we have come across a case where a Gallo-Romance obstruent-sonorant cluster shows uniform heterosyllabic behaviour. This is at variance with Onset Maximisation, which is supposed to first syllabify all C+yod sequences into homosyllabic (1a) clusters, so that the obstruent can be captured as the Coda of the preceding syllable in a further derivational step (cf. section 1). We believe that there is no need for either Onset Maximisation or Coda Capture here, since the result is consistently heterosyllabic (1b). Rather, the devices mentioned are generative artefacts that root in the philosophy of Chomsky & Halle (1968) where everything (or, at least, as much as possible) was procedural. In our opinion, the syllabic status of obstruent-sonorant sequences, given its variability, is not decided by the computational module of the grammar. Rather, it is a lexical property, just as much as the rest of syllable structure.

Thus far, we have come across a case where TR clusters have a wavering syllabic status (the *colubra* paradigm), and one where they are uniformly heterosyllabic. The remaining pages look at another instance of *muta cum liquida* that has stable syllabic properties, but this time as an affricate (1c).

5. TR is an affricate: Gallo-Romance epenthesis *cam(e)ra* > *chambre*

The discussion of problematic *muta cum liquida* in Gallo-Romance does not usually call on the facts known as consonantal epenthesis, i.e. *cam(e)ra* > *chambre*. This is quite surprising since the development at hand produces new TR sequences: the analyst has the opportunity to examine the conditions under which TR clusters are born. Therefore, epenthesis ought to be an important piece of evidence for the interpretation of *muta cum liquida* in general and their Gallo-Romance status in particular.

On our analysis, epenthesis is no epenthesis: the regularly invoked “bad contact” between two sonorants has no bearing on the insertion of the obstruent at all. Rather, the emerging group [br] in *chambre* is the strong version of the original [r] in *cam(e)ra*, which has come to stand in Strong Position after the loss of the post-tonic vowel. The new TR cluster represents one single consonant and

occupies the same space as its ancestor [r], i.e. one single skeletal slot; hence it instantiates an affricate (1c).²⁷

5.1 Gallo-Romance epenthesis: well-known facts

Relevant data regarding the Gallo-Romance epenthesis may be retrieved from any textbook. Latin post-tonic, as well as pre-tonic non-initial vowels, have been lost in the evolution towards French. This created an arbitrary contact between all sorts of consonants: $C\check{V}C_1VC_2V$ reduces to $C\check{V}C_1\emptyset C_2V$, and $VC_1VC_2\check{V}CV$ comes out as $VC_1\emptyset C_2\check{V}CV$, irrespectively of the quality of C_1 and C_2 (see for example Bourciez & Bourciez 1967: §§158, 189, 197, Pope 1934: §§369-370, Fouché 1966: 822-3, 840). If the resulting cluster C_1C_2 is m-l, m-r, n-l, n-r, s-r, z-r or l-r, a stop appears in the middle of the sequence. This stop will then be homorganic with C_1 , and also adopt its voice value (voiced after sonorants and [z], voiceless after [s]). Table (15) offers some illustration (L is shorthand for "liquid").²⁸

(15) French epenthesis of a homorganic stop

a. N_L		b. s_L	
m-r cam(e)ra	chambre	s-r *ess(e)re	être
num(e)ru	nombre	dix(e)runt	OFr. <i>distrent</i> (Fr. <i>dirent</i>)
m-l sim(u)lare	sambler	z-r laz(a)ru	ladre
cum(u)lu	combe	*miz(e)runt	OFr. <i>misdrent</i> (Fr. <i>mirent</i>)
n-r cin(e)re	cendre	c. L_L	
pon(e)re	pondre	l-r mol(e)re	moudre
n-l spin(u)la	épingle	*vol(e)r+ayo	OFr. <i>voldrai</i> (Fr. <i>voudrai</i>)

The classical analysis explains epenthesis by an alleged uneasiness of the contact between two sonorants (with a special proviso for [s,z]): depending on the flavour, this "bad contact" is said to be phonetic or syllabic. By contrast, a "good contact", i.e. one where either a well-formed branching Onset TR (ung(u)la > *ongle*, perd(e)re > *perdre* etc.) or a regular interlude RT (poll(i)ce > *pouce*, ver(e)cundia > *vergogne*) is created, does not trigger any "repairing" epenthesis.

²⁷ A parallel case is reported from Madagascar, showing that there is no typological ban against a system where all TR clusters are mono-positional, and that the appearance of a stop "ex nihilo" may well be the result of a fortition. In Madagascar compound formation the last vowel of the first word is lost, and the initial consonant of the second word strengthens in strong post-consonantal position (see section 2). Hence fufun(a) "smell" + fati "corpse" → fufumpati "disgusting smell" or fufun(a) "smell" + savuni "soap" → fufunt'avuni "smell of soap". In case the second word begins with [r], fortition produces [dr]: manan(a) "to have" + reni "mother" → mamand'eni "to have a mother". That is, [dr] must be viewed as the strong version of [r] which has been created by fortition and is necessarily mono-positional. The process is described at greater length in Ali (2003) and Ségéral & Scheer (in press).

²⁸ Note that the nasal of resulting VNTL clusters has regularly nasalized the preceding vowel; the sequence appears as $\check{V}TL$ in Modern French.

5.2 Syllabic units do not fall from heaven

We believe that this analysis is wrong: the reason for the appearance of the stop is not a bad contact. Rather, the stop emerges because the following liquid, of which it is an organic part, stands in Strong Position.

Our argument is based on a consequence of the traditional view, which we believe is unacceptable in regard of fundamental autosegmental principles. The classical interpretation, based on Onset Maximisation and the sonority slope of the resulting TR cluster, makes the [br] of *chambre* (< cam(e)ra) a regular branching Onset. On this analysis, thus, a skeletal slot needs to be added to the input *cam(e)ra* in order to accommodate the output: the sequence RR occupies two skeletal slots before epenthesis applies, against three after it has produced RTR.

We believe that this operation is impossible: skeletal slots do not fall from heaven.

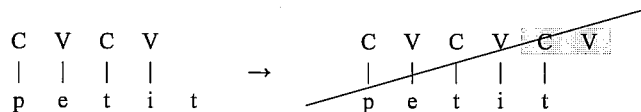
(16) syllabic units do not fall from heaven

- a. their exclusive origin is the lexicon.
- b. phonological computation can eliminate, but not create syllabic positions.

Although (16) is not usually made explicit, it is a fundamental underpinning of autosegmental theory. The heart of autosegmentalism is the insight that a syllabic unit may be present in absence of a melodic representative, and vice-versa. Countless analyses crucially rely on this representational possibility. However, the fact that a chunk of melody, or a tone, or some other non-syllabic object floats never causes the creation of a skeletal or a syllabic unit. Did it, the very notion of "floating object" would not make any sense since floating material would immediately create its own landing site and hence stop to float. This is not how natural language works. Phonology does not insert skeletal slots in order to accommodate some floating object that "would like to" be phonetically realised.

Illustration may be provided by typical floating consonants such as in the French words *petit*, *gros* etc. (but also in the English indefinite article: *a coffee* vs. *an apple*): these adjectives end in a floating *-t* and *-z*, respectively, which are pronounced before vowel-initial words (*un peti[t] enfant*, *un gro[z] enfant*), but have no phonetic realisation before consonant-initial words (*un peti(t) café*, *un gro(z) café*) and when *petit* appears before a pause (*il est peti(t)*, *il est gro(z)*). Table (17) shows that the existence of the floating melody does not trigger the appearance of skeletal material: otherwise the *-t* of *petit* would be audible all the time (here and henceforth, inserted syllabic material is grey-shaded).

(17) floating consonants do not trigger the insertion of skeletal material



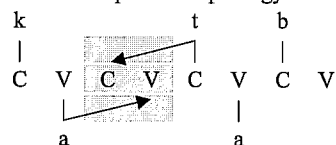
The same holds true for floating tones: they parachute on existing vowels, are lost or remain floating. There is no case on record where the “pressure” of a floating tone that “wants to be pronounced” provokes the appearance of a vowel.

Also, Brandão de Carvalho (in press) describes a situation in the Portuguese verbal system where a morpheme without prosodic support cannot make it to the surface unless it is offered enough space by a certain class of verbs.

This is not to say, however, that syllabic space may never be added in the course of a derivation. The only condition on the insertion of timing units is their lexical origin: a morpheme may consist of nothing but syllabic space. This situation may be argued to occur in Latin where the only difference between the present and the perfect of a verb such as *venio* is length: *venit* “he comes” vs. *vēnit* “he came”. In the same way, French floating consonants may be promoted to phonetic existence by a morpheme that arguably is made only of skeletal space: the feminine form of the adjective *petit* [pəti] is *petite* [pətit]. The melodic material that makes the difference between the masculine and the feminine, [-t], is present in the lexical entry of the masculine form (we hear it in liaison contexts, cf. above). Hence, it cannot be the feminine marker itself. Rather, the feminine morpheme provides the syllabic space that the floating -t needs in order to acquire a phonetic existence.

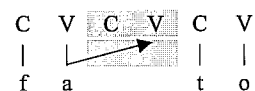
Typical templatic morphology of the Semitic kind may also illustrate this pattern. In Classical Arabic for example, the semantically unmarked measure I forms follow the template $C_1V_1C_2V_2C_3-$ (e.g. *katab-a* “he has written”). Measure II forms (causative/ intensive meaning) geminate C_2 (*kattab-a*), while measure III forms (reciprocal / conative meaning) lengthen V_1 (*kātab-a*). The two latter forms obviously suppose the insertion of additional skeletal material. On the analysis of CVCV, the inserted object is a CV unit in both cases (see Guerssel & Lowenstamm ms): in addition, measure II forms give order to spread C_2 , while measure III forms demand the spreading of V_1 . Table (18) shows how the extra CV unit that morphology provides is exploited by the phonology of the language.

(18) Semitic templatic morphology: CV inserted by morphology



Finally, stress may also materialise as skeletal space. This is the classical analysis of Italian Tonic Lengthening (Nespor & Vogel 1979): vowels lengthen in open syllables if they are stressed (e.g. Chierchia 1982,1986, Bertinetto 1981, Repetti 1991). For example, /fato/ “destiny” will appear as [fáato]. Here again, the extra CV unit on which the lexically short vowel spreads is not created by any phonological process: it is the material incarnation of stress, and hence has a lexical origin, as shown under (19).²⁹

(19) Tonic Lengthening: stress materializes as a CV unit



We may now examine the Gallo-Romance epenthesis in the light of the preceding discussion.

5.3 Gallo-Romance “epenthesis”: strengthening, not a “bad contact”

If it is true that phonological processes cannot provoke the insertion of syllabic material, the interpretation of [br] in *cam(e)ra* > *chambre* as a branching Onset must be rejected. The process at hand neither occurs at a morpheme boundary nor involves any independent morpheme, and the “epenthesised” consonant has no lexical origin. The only alternative for the representation of [br], then, is a contour segment (1c).

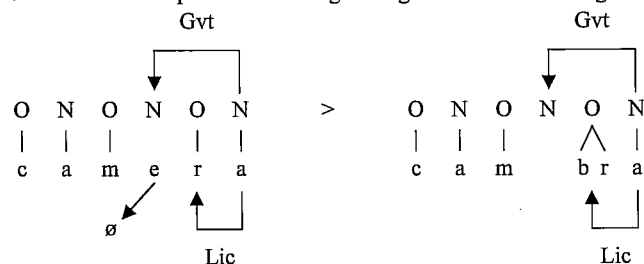
In this case, however, the process at hand can hardly be called epenthesis: on constant syllabic volume, a simplex sonorant develops a second branch under the same skeletal slot, thereby becoming an affricate. Rather, we are facing an fortition in the same way as for example in certain Italian dialects where n-s sequences develop a [t], taking the fricative [s] to the affricate [ts]: napolit. [pentsare], against It. *pensare* (cf. Rohlfs 1966:§§ 266). Parallel cases may also be quoted from Provençal, where [w] strengthens to [g^w] in C-w clusters (*tenguisti* < *tenuisti*, cf. Mok 1977:42), and from Gallo-Romance where the affricate [dʒ] is the reflex of [j] in C+yod sequences (see section 4).

These fortitions all occur in the same context: after a heterosyllabic consonant. We know that this position, together with the word-initial context, is strong (cf. the Coda Mirror in section 2). Now pre- and post-tonic syncope puts the second liquid of the *cam(e)ra* paradigm precisely into this position: it comes to stand after a heterosyllabic consonant. Therefore, “epenthesis” has got nothing to do with some “bad contact” between two sonorants. Rather, weak liquids undergo fortition in a context where this process is regular: the Coda Mirror. The whole object TR represents the strong version of the weak sonorant R, whereby

²⁹ We actually believe that the identity of stress is *always* a CV unit. Space restrictions preclude further discussion of this issue (see Larsen 1998, Scheer 2000:140ss).

the “epenthesis” T is an organic part of the R, and the sequence TR as mono-positional as the original R. Table (20) illustrates the process at hand.

(20) Gallo-Romance “epenthesis”: strengthening of R to TR in Strong Position



Another aspect of this evolution is the fact that the “epenthesis” stop inherits place and voice value from the preceding consonant.³⁰ This means that strengthening merely creates a second branch under the skeletal slot of the original sonorant, whose only specification is stopness. Place and voice values are then supplied by the preceding consonant.

The absence of strengthening when RT clusters are created by syncope is unsurprising: as before, the second consonant of the cluster, T in this case, stands in Strong Position. But T is already strong, and may therefore not undergo any further strengthening. There is no strengthening either when syncope produces TR clusters. The reason here is the same as in the classical scenario: the cluster TR, unlike RT and RR, is a well-formed branching Onset, whose members can acquire solidarity.³¹

Epenthesis usually stands off-side in the Gallo-Romance evolution: on the classical account, it is not related to any other process or regularity. By contrast our interpretation has the conceptual advantage of making “epenthesis” but an expression of the central regularity that governs Gallo-Romance diachronics, i.e. positional strength (see section 2.1).

Also, beyond this generalisation, the existence of affricate TR clusters in Gallo-Romance allows to envision a novel analysis of other phenomena that are commonly regarded as marginal and ill-integrated into the guiding lines of Gallo-

³⁰ The fact that sonorants spread their voicing to other segments is problematic in itself, and for all theories. On account of the difference between spontaneous and non-spontaneous voicing (i.e. absence of voiceless counterparts for sonorants, unwillingness of sonorants to undergo final devoicing etc.), it is often assumed that only obstruents possess phonologically active voicing; sonorants are supposed to be voiced by default (Chomsky & Halle 1968 *et passim*) and should therefore be unable to transmit their voice value.

³¹ In the same way as ordinary syllabic models, CVCV encodes the solidarity of branching Onsets - only is this done in lateral, rather than in arboreal terms. The detail of the representation of branching Onsets in CVCV does not matter here; it is exposed at length in Scheer (1999, 2004:§14).

Romance evolution: parasitic r (e.g. thesauru > trésor) and metathesis of r (e.g. berbice > brebis). Like “epenthesis”, these developments create new TR clusters and therefore cannot stand aside when *muta cum liquida* is examined.

5.4 Parasitic r and metathesis

In French, words sometimes bear an r that has no etymological source, so-called parasitic r (e.g. trésor < thesauru). Since the appearance of parasitic r is everything but systematic or regular, the classical attitude is to simply mention its existence without offering any interpretation (e.g. Fouché 1969:756-760, Bourciez & Bourciez 1967:§178). Some examples (from all periods of French history) appear under (21).

(21) parasitic r in French

a. #T__V		c. C.T__V	
vit <u>ic</u> ula	<i>v</i> uille	per <u>d</u> ice	<i>per</i> drux
thesaur <u>u</u>	<i>tr</i> ésor	celt. *derb(i)ta	<i>dar</i> tre
néerl. tingel	<i>tr</i> ingle	*term(i)te	<i>ter</i> tre
		*can(a)pu	<i>chan</i> vre
b. V.T__V		spel <u>t</u> a	<i>épe</i> autre
patte X dial. gadrouiller	<i>pat</i> rouille	calendari <u>u</u>	<i>calen</i> drier
flam. pleute (??)	<i>pleu</i> tre	regest <u>a</u>	<i>regis</i> tre

The reason for the appearance of parasitic r is quite unclear: even when extensively drawing on “analogical pressure”, the existing of parasitic r in this, rather than in that word remains largely erratic. Even a given root may have forms with and without intrusion: *arbalète* “crossbow” (< arc(u)ballista) is virgin, but *arbalétrier* “the one who shoots with a crossbow” has incorporated an r.

A well-known modern instance of parasitic r is *entartreur* “someone who puts a cream pie in the face of somebody else”. The derivational basis is *tarte* “cream pie”, but speakers produce very regularly *entartreur*.³² The intrusion here is even more surprising when considering that they are obviously prepared to neglect a semantic barrier when producing *entartreur*, which may be construed as an agentive of *tartre* “tartar”; *entartreur*, then, would mean “somebody who spills tartar on somebody else”.

If the cause of intrusion remains unclear (and we do not have anything to say about this), one aspect of parasitic r strikes the observer: its landing site is perfectly regular. Parasitic r indeed always appears after stops, and these stops occur in the Strong Position, i.e. either word-initially (sometimes) or in post-Coda position (most frequently). By contrast, no intrusion is reported for stops in weak position: r never docks on Coda consonants, and the two examples in intervocalic

³² Typically when talking about Noël Godin, a Belgian (nickname: “Le Gloupier”) who attacks ridiculous and/ or morally abject persons with cream pies (Bill Gates, Stéphanie de Monaco, Bernard-Henri Lévy, Patrick Poivre d’Arvor, Nicolas Sarkozy etc).

position mentioned under (21b) appear to exhaust the record of intervocalic cases - and yet they are quite obscure.

The process whereby parasitic r creates *muta cum liquida* is not a fortition: TR is not the strong version of T (recall that TR is the strong version of R). Nevertheless, the fact that parasitic formation of TR clusters occurs only in Strong Position is probably better understood when there is reason to believe that the language accommodates mono-positional TR clusters (1c). The origin of the parasitic r is as puzzling as before - but its "choice" to parachute on this, rather than on that consonant, makes sense only when looking at the process through the positional prism, and when allowing parasitic r to land without modifying syllable structure or augmenting the overall skeletal volume.

Another phenomenon that we believe may be analysed along these lines are the various metatheses of liquids that have occurred all through the evolution of Gallo-Romance (Pope 1952 : §124, Fouché 1969: 751-753, Bourciez & Bourciez 1967: §§178, 180). As parasitic r, this phenomenon is erratic, and its cause obscure: of all items that present the relevant input structure, only some words show metathesis. Consider the data under (22).

(22) metathesis in Gallo-Romance

- | | |
|--|--|
| a. from post-Coda TR to word-initial:
VC.TRV → #T__ | c. b. from Coda to word-initial:
VR.CV → #T__ |
| temp(e)rare <i>tremper</i> | torc(u)lu <i>treuil</i> |
| fimbria <i>frange</i> | *berbice <i>brebis</i> |
| *fim(o)riare OFr. <i>frambaier</i> | *format(i)cu <i>fromage</i> |
| fund(u)la <i>fronde</i> | *turb(u)lare <i>troubler</i> |
| | *torsare <i>trousser</i> |
| b. from intervocalic TR to word-
initial: VTRV → #T__ | *bertjolu OFr. <i>breçuel</i> |
| *bib(e)rat(i)cu <i>breuvage</i> | furlone (< frk) <i>frelon</i> |
| | *hurslo |

As may be seen, r always migrates to a word-initial T³³, and its origin is almost always a Coda.³⁴

The latter observation may be interpreted as a simple lenition whereby r is lost in weak position, i.e. the Coda. This process, then, is but one aspect of what generally happens to Coda consonants in Gallo-Romance: they are systematically eliminated (only most of the labials and the lateral survive, see (3)). R generally resists lenition in Coda position, but some cases where it falls prey to deletion

³³ Note that this is only the Gallo-Romance situation. In Italo-Romance for example (Rohlf 1966:I.§322), the landing site may also be an intervocalic T (*pratica* → *pàtriga* OPadov.), and even a Coda (*fratello* → *fardelo* Rovig.), though Rohlf indicates that these varieties are rare.

³⁴ The lists shown under (25a) and (25b) are close to exhaustive, while (25c) renders only a fragment of the record: e.g. *frelater* (< dutch *verlaten*), *cravache* (< germ *Karbatsche*), *cramoisi* (< span *carmesi*), *calembredaine* (< *calembourdaïne*), *fripe* (OFr. *frippe*, *ferpe*, *felpe* from **faluppa*), *fredaine* (< *fard-*), etc.

word-finally are on record: the infinitive marker of the first verbal group *-er* comes out as [-e], and r is also lost in *léger*, *premier* [-e] etc. More sporadically, r is dropped in internal Codas: OFr. *berfroi*, Mod. Fr. *beffroi* [befrwa], pop. [mekrædi] instead of [*mercredi*] (cf. Bourciez & Bourciez 1967: §180).

Hence metathesis may be conceived as an instance of lenition of r in Coda position. Its peculiarity, then, is the fact that the segmental information of the lenited object is not lost: r does not disappear; it migrates. But this, again, is not really surprising since all other consonants that fall prey to lenition in Coda position follow the same strategy: one of the most consistent characteristics of Gallo-Romance is the fact that the melodic information of eliminated Codas tends to be preserved: at least a part of it hooks on some neighbour (see (3)).

The most obvious example are nasal consonants: they are lost in internal and final Codas as such, but hand down their nasality which to date appears on the preceding vowel. In the same way, the lateral, which was first velarised and then eliminated from internal Codas, continues its existence on the preceding segment, which has been "velarised". Finally, obstruents must go in Codas as well. Even though they are unable to deposit their melodic information on a neighbour, they survive, at least word-finally, as floating consonants, and surface in liaison contexts.

The peculiar property of the lenition of r in Coda position thus is not the fact that its melodic information tends to be preserved - it is the means of this conservation. The information is not "stocked" on an adjacent segment, but travels a greater distance in order to end up docking on a consonant, rather than on a vowel.

Our analysis contributes to the understanding of this funny way of conserving segmental information: the conditions that allow for its existence are created. That is, the scenario discussed supposes the existence of affricate TR clusters in the language (and in the theory).

Finally, the choice of initial consonants as the landing site for migrating r is but further illustration of the distribution of affricate TR clusters that has already been evidenced: affricate TRs like the Strong Position. This is true for "epenthesis" (*cam(e)ra* > *chambre*) and the intrusion of parasitic r where the target is post-consonantal, as well as for metathesis, where r lands on word-initial consonants.

6. Conclusion

In this article, we have reviewed three situations: one where TR clusters are always heterosyllabic (C+j sequences, *rabja* > *rage*), one where they are always affricates ("epenthesis" *cam(e)ra* > *chambre*) and one where they endorse wavering homo- and heterosyllabic coats (the *colubra* paradigm).

In all cases, it is only when phonological arguments are considered that the syllabic status of *muta cum liquida* may be discovered. Unlike for RT, RR and TT sequences which are always heterosyllabic, surface information such as the

sonority slope or phonetic properties tells us nothing at all about the syllabic identity of TR clusters. *Muta cum liquida* is a plastic syllabic object, and a reasonable means to uncover the identity of individual TR clusters is to look at them through the positional prism: the interpretation of their behaviour in terms of a theory of lenition and fortition may be enlightening.

Therefore, we argue, phonological theory must not feature any pre-determining device that favours some particular syllabification of TR clusters. Even if it is true (and it may well not if one puts down the Indo-European glasses) that there are more TR clusters in this world which instantiate branching Onsets than there are *muta cum liquida* with Coda-Onset or affricate status, this statistical information is irrelevant. We follow Newmeyer (1998) on this issue, who recalls that linguists committed to the concept of competence define what a possible, not what a frequent grammar is. Therefore, the traditional devices Onset Maximisation, ambisyllabicity and Coda Capture, in whatever modern coat, are ill-inspired: they produce a grammar with in-wired branching Onsets.

Turning now to the general picture of Gallo-Romance diachronics, we believe that the foregoing discussion can reintegrate a number of scattered phenomena that are usually thought of as unrelated and marginal into an overall scenario where they appear as an instance of the central regularity that governs Gallo-Romance: the action of positional (syllabic) forces that cause lenition and fortition.

Beyond what could be treated in the present article, the Gallo-Romance situation described raises an interesting question for phonological theory: if it is true that *muta cum liquida* can appear in different coats in the same synchronic state of a language (a hypothesis that is fed by our analysis), is their distribution random, or does it obey certain rules? We are reluctant to accept that the syllabic status of TR clusters is an idiosyncratic and unpredictable property of each lexical item. If, then, the various types of TR clusters like to appear in certain positions, the data reviewed give quite clear indication as to how they line up: all cases of affricate *muta cum liquida* discussed occur in the Coda Mirror, i.e. word-initially or after Codas. Hence they seem to be uneasy in weak positions (i.e. intervocalically and in Codas). It may be speculated, then, that homosyllabic TR clusters (1a) rather elect home in intervocalic position. And, of course, heterosyllabic *muta cum liquida* (or rather, its first member) is the natural candidate for Codas. Further study must run these hypotheses against a greater empirical record.

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