Facts, theory and dogmas in historical (Romance) linguistics*

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0.   Introduction

The aim of this paper is twofold: on the empirical side, I intend to sketch a reconstruction of the diachronic development of quantity in the Romance languages. Vowel quantity (henceforth **VQ**) and its relation to syllable structure will provide the main thread (from §2 on), but I will also touch upon consonant quantity, which is inextricably related, considering processes such as Western Romance (henceforth **WRom**) degemination and the rise of Raddoppiamento Fonosintattico (henceforth **RF**).

As for theory, it is not my intention to push any specific model here but, rather, to bring home two more general points. I would like to show, on the one hand, that historical evidence can shed light on competing synchronic analyses and on related theoretical issues (§§4-5); and, on the other hand, that the study of historical linguistics needs a set of tools of method of its own, that cannot be simply replaced by the application of any theoretical model for synchronic description, however refined. This set of tools, in particular, includes two procedures that are specific to historical linguistics, viz. comparative reconstruction and the inspection of the philological record (§§7-10).

In both these domains, the Latin-Romance continuum, with its two and a half millennia of documented history and with the great amount of scholarly work that has been carried out on it, provides an ideal testing ground for competing analyses. In this historical-geographical domain, the burden of established *facts*, to be dealt with by means of the appropriate (historical) method, is too heavy for any analysis to ignore it–which some recent proposals tend to do, partly because of emphasis on (synchronic) *theory*. As I will demonstrate with the example of the development of quantity from Latin to Romance, a balanced application of the method of historical linguistics garantees the best descriptive results and furthers our comprehension of this intricate empirical question.

1.   Prologue: dogmas, religion, and dangerous things

Before we set off on our empirical journey (from §2 onwards) let me say just a few words on the third general concept mentioned in my title: dogma. When I first visited the United States in 1997 I gave a talk at the phonology seminar of a West Coast University. The paper, subsequently published as Loporcaro (1997a), was about an epenthesis process found in a Catalan dialect spoken in Alguer (NW Sardinia). I described the synchronic working of the process, then reconstructed its development over time, and finally made the following theoretical point: the epenthesis facts in this dialect are best accounted for by

means of a postlexical rule, distinct from syllabification conditions obtaining word-internally. Consider for instance the two words /ˈfet/ 'done.MSG' and /ˈsink/ 'five'. If they are put in a row, syntagmatically, [i]-epenthesis must occur at word boundary ([n ˈe ˈfet**i** ˈsiŋk/*ˈfet ˈsiŋk] 'I've done five of them'), even though the consonant cluster that is thereby broken does exist within words: e.g. [ˈfets] 'done.MPL', [ˈvintsis] 'win.2SG'. The historical evidence also suggests that vowel epenthesis at word boundary should be considered as a process in its own right: it developed gradually as a variable rule at the turn of the 19th century and became categorical during the first half of the 20th century, while syllabification conditions word-internally remained entirely unaffected.

Under my analysis, thus, the facts of vowel epenthesis in Algueres were (and are) at odds with most current accounts of epenthesis within Generative Phonology–especially within OT. These accounts insist on the idea that epenthesis is best explained as just one epiphenomenon of syllabification and that this in turn provides evidence in support of no-rule approaches to phonology as opposed to rule-based ones.[1]

By way of introduction to his counterarguments to my talk, a colleague in the audience said the following words: «let me explain you what the religion of the place is» [centre of deixis = UCLA]. Then, a very interesting discussion ensued. Yet, the wording of that introductory statement reminded me of the informal definition of dogmatism which is given by reverend Robert Mackintosh under the headword «Dogma» in the *Encyclopaedia Britannica* (1959 edition, VII:501): «I'm not arguing with you, I'm telling you».

In the specific case under discussion, the dogma is that no-rule approaches must be superior to rule-based ones, quite independently of the specific analyses for any given set of data. Needless to say, such an attitude makes unbiased cross-theoretical debate–to weigh the merits of competing analyses–extremely difficult. This is what I meant with the title of this prologue: I'd rather plead for non-confessionality in historical linguistics (and linguistics in general, for that matter).

2. Vowel length in Latin: facts and theory

We all know that facts are construed, especially so in historical linguistics, as pointed out effectively by Lass (1997:27):

> «To the extent then that history is not observational but argumentative, it is necessarily constructivist; the historian participates actively in making his subject matter».

Yet, we do speak all the time of observations that are theory-neutral as opposed to arguments that are rather theory internal. Take the starting point of my discussion of VQ, and compare the two statements in (1a-b):

(1)   a. Latin had contrastive VQ, inherited from Proto-Indoeuropean: e.g.
         lĕvis 'light' vs. *lēvis* 'polished', *vĭll(a)* 'villa' vs. *vīll(um)* '(animal) hair'

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[1]   Cf. e.g. Prince & Smolensky (1993:94): «Theories based on manipulation of the segmental string are capable of little more than summary stipulation on this point» [i.e. on «the location of epenthetic elements»].

b. Kaye (1989:151): [in Latin] «length distinctions can be removed from considerations of phonemic status and assigned to syllable structure, where they belong».

(1a) is handbook wisdom, based on convergent evidence from comparison with Italic languages and with other branches of IE, as well as from Latin metric and from remarks by Latin grammarians. (1b), on the other hand, is the conclusion of Kaye's (1989) analysis of Latin quantity: clearly, it requires the reader to share several assumptions about phonological representations and to follow several steps in a complex argument within one specific theoretical model, that of Government Phonology. In other words, it is a theory-internal conclusion. For anybody not sharing those assumptions there is no compelling reason to distrust what the Latin evidence itself shows, with minimal pairs like those in (1a): long vs. short vowels, namely, could occur in the same syllabic environments (although with some restrictions, we cannot dwell on here).

Of course, (1a) is not pure «facts» either. It also requires that we share some assumptions concerning e.g. contrastiveness, the definition of quantity, etc. Yet, there is a clear difference: (1a) pertains to what Dixon (1997) calls Basic Linguistic Theory, while (1b) clearly does not.

3.   Vowel length from Latin to Romance: three basic types

Assuming (1a) as our starting point, let us now consider what happened to VQ in Romance. As is well known, the Latin VQ contrast has not survived into any of the Romance languages, which display instead one of the three options listed in (2):

(2)		a. ˈCV.CV		b. ˈCVC.CV	
i.	Italian (= Sardinian)	[ˈlaːto]	'side'	[ˈgatːo]	'cat'
ii.	Spanish (= Ibero- and Daco-Romance)	[ˈlaðo] < LATUS	'side' =	[ˈgato] < CATTUM	'cat'
iii.	Northern Italo-Romance (Cremonese)	[ˈpaːn] < PANEM	'bread'	[ˈpan] < PANNUM	'cloth'

Both Italian (2i) and Spanish (2ii) lack distinctive VQ: in the latter, all stressed vowels have approximately the same duration, regardless of syllable structure, and the same goes for the rest of Ibero-Romance and for Romanian. In Italian, on the other hand, stressed vowels are lengthened in open word-internal syllables, when the word occurs prepausally, at least. The same applies to Sardinian.

The third option (2iii) is exemplified with a Northern Italo-Romance (= henceforth **NItR**) variety, the dialect of Cremona (Southern Lombardy). It is found in most of NItR and has been argued to have been once more widespread, spanning all the territory from Northern France to the Apennines, down to the La Spezia-Rimini line. In this area, which is sometimes called Northern Romance, a novel VQ contrast was established, as apparent from the minimal pairs in (2iii).

The empirical question I will discuss in what follows is that of the historical relationship between these three different Romance developments of VQ. The general

point I want to make is that all of these developments can be explained most economically under the assumption that PRom, as for vowel length, was just like modern standard Italian.

4. Open Syllable Lengthening in standard Italian (and Proto-Romance)

In order to pave the way for our diachronic explanation, thus, we first have to take a look at the synchronic system of (Tuscan-based) standard Italian. For this variety, the literature in experimental phonetics (e.g. Fava & Magno Caldognetto 1976, Bertinetto 1981, Marotta 1985, D'Imperio & Rosenthall 1999 etc.) unanimously reports the complementary distribution in (3):

(3)   ˈCV.CV   ˈCVC.CV
      [ˈkaːne] 'dog' (ˈV= ~ 200 ms.)   [ˈkanːe] 'reeds' (ˈV= ~ 100 ms.)

A stressed vowel in a word pronounced in isolation can last up to 200 ms. if it occurs in an open word-internal syllable. Before a geminate, however, it is unlikely to last more than 100 ms. In other words, Italian has an Open Syllable Lengthening (henceforth **OSL**), that was called until not long ago an allophonic rule (as stated in (4)) and can be restated, for adherents of no-rule approaches, in the form of the OT-tableau in (5), where a structural constraint ACC(ENT)-µµ overrides a faithfulness constraint DEP(ENDENCE)-µ-IO and thus forces every stressed syllable to be bimoraic:[2]

(4)   V   Vː/   __   ]   Open Syllable Lengthening
                          |
                     [+stress]   where]   ]PW

(5)

/ˈlato/	superordinate constraints	ACC-µµ	DEP-µ-IO	non-selective constraints
a. [ˈlato]		*!		
☞ b. [ˈlaːto]			*	

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[2]   In what follows, I will stick by the rule-metaphor, although this notational difference is immaterial to our present concern.

Now, assume that this OSL was already PRom, following Schuchardt (1866-68,III:44), Weinrich (1958), Morin (2003) among others. This automatically yields an explanation for the loss of Classical Latin VQ, that was contrastive and independent of syllable structure (cf. (1a)), and consequently could not survive the rise of rule (4) (or the reranking of the two relevant constraints in (5)). This in turn implies that languages nowadays lacking OSL must have lost it, either simply by rule suppression, as in (2ii) (Ibero-Romance and Daco-Romance), or by lexicalising its output, i.e. by transforming the allophonically lengthened vowel of PRom into an underlyingly long vowel, as in (2iii) (Northern Romance).

Before we proceed any further, however, we have to face a substantial objection. In fact, there are recurrent claims that the data in (3) is not sufficient proof for positing an OSL rule (or constraint) in modern standard Italian. And if it were so, it would be absurd to build a reconstructive argument on a synchronic rule that does not actually exist, in the first place.

This has been claimed among others by Luschützky (1984: §§10-11) and, more recently, by McCrary (2002, 2003, 2004). In her thorough experimental study of vowel durations in the speech of Tuscan speakers from Pisa, McCrary found that vowel duration varies gradually, as a function of both the segmental nature and the number of the consonants following the stressed vowel. Consider for instance Table 1 (after McCrary 2003, n°25):

[INSERT TABLE 1 ABOUT HERE]

The graph shows that vowel duration increases gradually depending on the following consonants: stressed vowels are shortest before stops and longest before rhotics, both in a closed and in an open syllable.

Table 2, on the other hand (n° 18 in McCrary 2003), shows that there is a considerable overlap in duration between stressed vowels in open syllable, before a tautosyllabic consonant cluster, and before a heterosyllabic consonant cluster.

[INSERT TABLE 2 ABOUT HERE]

From this, McCrary (2003:15) concludes that «The conditioning factors […] are segmental, contrast-based conditions» and that «Syllable structure is not implicated in these phenomena». In this view, stressed vowel durations are exhaustively determined by the durational trade-off between stressed vowels and the following consonants: this trade-off being trans-syllabic, there is no room for OSL.

The fact that stressed vowel duration in Italian, at the phonetic surface, does not display a plain complementary distribution but rather a fine-grained continuum is in itself not surprising and has been known for a long time, as is shown in (6), based on an experimental study by Fava & Magno Caldognetto (1976):

(6) ˈCVCV   ˈCVTRV   ˈCVRTV   ˈCVLTV   ˈCVSTV   ˈCVNTV   ˈCVCːV
     208,4 > 184,1 > 177,6 > 121,7 > 112,7 > 98,6 >   85,3

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C = consonant, V = vowel, T = plosive, S = sibilant, N = nasal, R = trill, L = lateral

This gradient, however, is not in itself conclusive proof that OSL does not exist. McCrary's conclusion crucially depends on the model adopted, which is phonetically grounded OT, an output-oriented model that conflates phonology and phonetics (cf. Flemming 2001, Kirchner 1997). Consider, however, the more conservative view displayed in (7) (cf. e.g. Kiparsky 1985, Keating 1990):

(7)	a.	/underlying representation/
	b.	postlexical (allophonic) processes
	c.	phonetic implementation constraints (e.g. coarticulation)
	d.	[output]

This model differentiates between postlexical allophonic processes (7b), which operate on phonological features, and low-level phonetic constraints (7c) (typically, coarticulation) that are gradual in nature and do not operate in terms of distinctive features.
The same basic idea underlies the model of Natural Phonology (cf. Stampe 1979, Dressler 1984)–for this model, in (7) one would have to add prelexical processes, shaping underlying phoneme inventories. In this view, phonological processes are motivated by phonetic constraints, but do not *reduce* to them. As Dressler (1984:31) puts it,

«Anderson (1981) attacks a straw-man who would reduce phonology to its phonetic basis, e.g. phonological cover features of a specific language […] to phonetic features measured experimentally».[3]

Under a model such as (7), the Italian facts in (6) (and in McCrary's findings in Tables 1-2) can be interpreted as follows. First, allophonic OSL applies, deriving lengthened stressed vowels in open syllables. Then, coarticulation between sounds in the speech chain intervenes, so that the contrast in length becomes blurred at the surface, and the continuum in (6) eventually emerges.
     Diachronic evidence in our case supports a model such as (7). To see how, it suffices to consider virtually anyone of the syllable-related sound changes reported in handbooks of (Romance) historical linguistics, like /a/-fronting in (Old) French ((8)) or /ɛ/-diphthongization in (Old) Tuscan ((9)):

(8) /a/-fronting in (Old) French

| /a/ | CAPUT | CAPRAM | CHARTAM | CALDAM | CASTAM | CANTAT | CARRUM |
| | *chef* | *chèvre* | *charte* | *chaude* | *chaste* | *chante* | *char* |

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(9) /ɛ/-diphthongization in (Old) Tuscan

/ɛ/	HERI	PETRAM	PERDIT	CELS(AM)	VESTEM	CENTUM	TERRAM
	ieri	*pietra*	*perde*	*gelso*	*veste*	*cento*	*terra*

The standard account of such changes implies that there was an allophone lengthened via OSL in the first place, and that this allophone underwent the change while the non-lengthened one remained unaffected. The examples in (8)-(9) (which contain the Latin etyma as well as the Romance outcomes) are displayed in the same order as the decreasing stressed vowel durations in the continuum (6). Yet, on this continuum, the language itself–through the application vs. non-application of sound change–makes a binary choice. And this binary choice requires that OSL be assumed for those varieties prior to change. In other words, it requires that we have a phonology, interacting with phonetics, rather than just conflate the two.

In fact these elementary generalizations about sound change would be missed under the conflated view of phonology-phonetics. If vowel duration really depended exclusively on segmental coarticulation effects, then the statement of the changes in (8)-(9) could not make reference to either syllable structure or to a lengthened allophone. And no sensible alternative is in sight. Clearly, the nature of the following sound does not play any role here (cf. in (9) the application of diphthongization in *ieri* vs. the non-application in *terra*). Thus, the only possibility left would be to assume that speakers, one day, applied colouring or diphthongization to just those stressed vowels whose actual phonetic duration was, say, 165 milliseconds.[4] This is unconceivable, however, since experimental phonetics shows that there is an overlap in absolute durations across different contexts and, besides, that duration is contingent upon speakers, speech rate and style.

This in no ways detracts from McCrary's account of the *phonetics* of stressed vowel duration in modern standard Italian. Only, there is no genuine case here against OSL: the phonology of vowel length cannot be reduced to phonetics alone, as the evidence from diachrony eloquently reminds us.

5. Digression 1: Vowel length and the variability of syllable structure

Once the two distinct levels in (7b-c) are admitted, one can observe an interesting interplay between allophonic length (and syllabification, upon which allophonic length depends) and low level coarticulation and/or compensatory effects.[5]

In fact, in several Romance varieties–typically, those spoken in south-eastern Italy, represented in (10) by the Apulian dialect of Bisceglie–stressed vowels undergo changes comparable with those in (8)-(9): (The specific change involved in (10) is /a/ velarization in open syllable.)

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[4]   This solution would parallel, for vowel quantity, the set of constraints assumed by Kirchner (1997), which introduce into the phonology of vowel quality direct reference to phonetic substance replacing e.g. the feature specification [+high] with the «abstract value»–V(owel)h(eigh)t > 33 etc.

[5]   This interplay is in keeping with the idea that «The boundary between phonetics and phonology is largely porous», as Iverson & Salmons (2003:199) recently put it, mediating between the ideas of a strict separation and of an outright conflation of the two (as respectively advocated by Lexical Phonology and phonetically grounded OT).

(10) /a/-velarization in the dialect of Bisceglie (Apulia; Loporcaro 1996:171)

/a/	CAPUT	LATRO	BARBAM	EMPLASTRUM	PLATEAM
	'kɔpə	'latrə	'varvə	'mbjastrə	'catːsə
	'head'	'thief'	'beard'	'poultice'	'square'

However, unlike in Tuscan or in French, here only the environment CVCV counts as an open syllable, whereas all consonant clusters–including obstruent + rhotic–are heterosyllabic and prevent the change from applying. Interestingly, also here the binary option respects the vowel duration continuum: only, it cuts across it at a different point.

Incidentally, the occurrence of changes such as that in (10) allows us to take leave of a well-entrenched dogma of historical Romance linguistics, exemplified in the following quotation from Allen (1973:139 n. 2):

«In late Latin, as the evidence of Romance development shows, there was a shift of accent from e.g. *ténebrae* to *tenébrae*. But this can hardly mean that the syllabification was then *te.neb.rae*, since the Romance evidence also indicates an *open* syllable».

It is often assumed, in fact, that *muta cum liquida* clusters are (and were) always tautosyllabic in Romance (cf. also Steriade 1988:379, Bullock 2001:187). However, while this is actually the case in the major standard languages (as exemplified with French and Italian in (8)-(9)), this tenet does not withstand closer inspection as soon as dialect variation is considered, given data like those in (10).[6]

From a theoretical point of view, this is evidence against theories that only admit tautosyllabication of these clusters, like Government Phonology (Kaye *et al.* 1990:210), and in support of preference theories for syllable structure like Vennemann's (1988:43-6).

6. Loss of OSL: Ibero-Romance and Daco-Romance

Reverting now to the classification of Romance outcomes in (2), if OSL was PRom, then the varieties in (2ii) (like Spanish, Portuguese, Romanian) must have lost it. A parallel for this rule loss is provided by the demise of intervocalic obstruent lenition in Eastern Romance as reconstructed by Cravens (1991, 2002). Lenition is one of the major isoglosses responsible for the split between Western and Estern Romance, as it took place in the West, not in the East (cf. (11a)):

(11)	Spanish	French	Italian	Romanian			Latin	
a.	*rueda*	*roue*	*ruota*	*roată*	lenition	<	ROTAM	'wheel'
b.	*copa*	*coupe*	*coppa*	*cupă*	degemination <		CUPPAM	'cup'

Comparison of (11a-b) shows that, in Western Romance, lenition co-occurred with degemination in a chain-shift that was analyzed as a push chain by Martinet (1955) but actually was a drag chain, historically, since lenition is demonstrably older. In fact, the philological evidence discussed in Politzer (1951), Campanile (1971:60) shows that

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6   Cf. Loporcaro (2005a) for more relevant examples.

intervocalic lenition already occurred in Latin. The problem with lenition is that the harbingers of the Romance process are documented almost everywhere in the Roman empire, not only in the West, but also in the East (e.g. EXTRICADO, for -ATO, CIL III 3620, from Pannonia Inferior, AD 217), although in the East lenition did not eventually succeed as shown in (11a) by the voiceless stop in Romanian *roată*.

The explanation proposed by Cravens is the following: Latin had an allophonic voicing process, just like American English voicing and flapping of intervocalic -*t*-. This process, then, was phonologized in the West, leading to restructuring, but was lost in the East.

The fate of OSL in the (2ii) Romance languages may well have been of this kind: when degemination applied, the two environments in (2a) vs. (2b) (open vs. closed syllable) became identical, so that an allophonic OSL could not possibly persist. Spanish, Portuguese, Catalan, and Romanian chose the rule-loss option. Northern Romance, on the other hand, followed a different path and developed a novel VQ contrast.

7. The Northern (Italo-)Romance type

7.1. *The facts*

Many Northern Italian dialects (and some other varieties of Rheto- and Gallo-Romance) still preserve the VQ contrast to this day. As for the distribution of this contrast, two basic subtypes are to be distinguished. In some dialects–exemplified, again, with Cremonese in (12)–it occurs in both oxytones (12i) and paroxytones (12ii):

(12) Cremonese (Southern Lombard; Oneda 1965:34, Rossini 1975:190):

	a. ˈCV.CV		b. ˈCVC.CV	
i. vowel quantity contrast in oxytones	[ˈpaːn]	'bread'	[ˈpan]	'cloth'
	[ˈpeːl]	'hair'	[ˈpel]	'skin'
ii. … and paroxytones	[ˈpaːla]	'shovel'	[ˈspala]	'shoulder'
	[ˈlaːna]	'wool'	[ˈkana]	'reed'

In other dialects–exemplified with Milanese in (13)–it occurs only in oxytones, not in paroxytones:[7]

(13) Milanese (Western Lombard; Nicoli 1983:45, Sanga 1984:60-4):

	a. ˈCV.CV		b. ˈCVC.CV	
i. vowel quantity contrast in oxytones	[ˈkaːl] 'loss'		[ˈkal] 'corn'	
	[ˈfyːz] 'spindle'		[ˈfys] 'were.3SUBJ'	
ii. … but not in paroxytones	[ˈpa(·)la] 'shovel'		[ˈspa(·)la] 'shoulder'	

Note that all the words involved in these pairs stem from Latin disyllables as shown by the CV skeleton on top: the words now ending in a consonant underwent apocope, since in most NItRom dialects non-low final vowels were generally lost. The CV skeleton also

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shows that the contrast, in Latin, used to be one of gemination, that was neutralized through WRom degemination (11b).

7.2. The analyses

Comparing these two different types of systems, the question in (14) naturally arises.

(14) Same diachronic source for contrastive VQ in (12) and (13)?

    a. Yes. Two subsequent stages in the same development.
       Loporcaro (2003), Morin (2003)
    b. No. Two distinct developments.
       Baroni & Vanelli (2000), Bonfadini (1997), Francescato (1966), Hualde (1992), Montreuil (1991), Prieto (1994, 2000), Videsott (2001), Vanelli (1979) etc.

The first solution would be more economical. Yet, the second one seems to enjoy more favour: (14b) lists only some of the many contributions, in both traditional dialectology and theoretical phonology, which subscribe to the view that the two types are totally unrelated. They mostly do so implicitly. Repetti (1992), however, has the merit of making this point explicitly, as she lists the divorce between the two types of development among the main results of her reconstructions (Repetti 1992:180):

> «In this paper I have shown how similar synchronic structures (long vowels) in related languages (northern Italian dialects) *may have different origins*. In some dialects, the long vowels are the result of vowel lengthening in open syllables (bimoraic norm), while in others the long vowels arose through a process of compensatory lengthening due to apocope of word final vowels» [respectively, Cremonese vs. Milanese; emphasis added, M.L.].

Repetti's (1992:175) explanation for the rise of VQ in Milanese, summarized in (15), excludes any historical relationship with PRom OSL:[8]
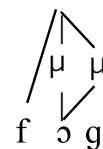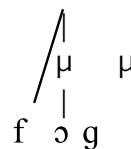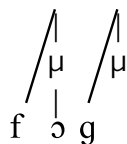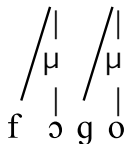
(15) Milanese: FOCU > *['fɔgo] > ['føːg]/['føːk] 'fire'
    a. input form   b. apocope   c. parasitic   d. compensatory
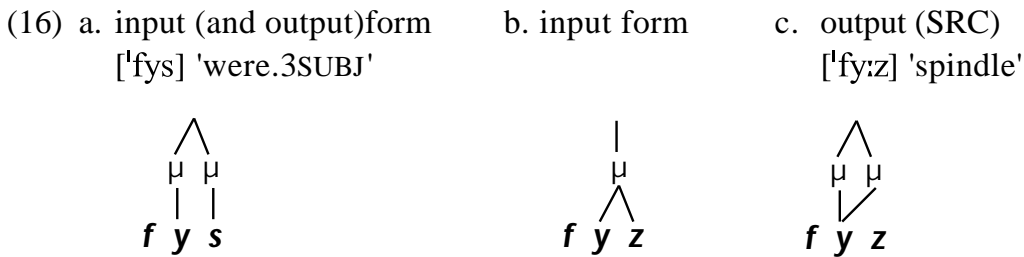   delinking   lengthening

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[8]   This point is made explicitly too: «Milanese (and Friulian) long vowels cannot derive from Late Latin vowel lengthening in open syllables» (Repetti 1992:174).

Under this analysis, contrastive VQ arose through compensatory lengthening as final vowels were deleted (15b) and their prosodic weight was transferred to the stressed vowel, via mora reassociation (15d). Since final /a/'s were not deleted, no distinctive VQ arose in paroxytones that preserved final /a/ (as in (13ii)).[9]

A number of alternative analyses of the rise of Milanese VQ have been proposed in work in Generative Phonology over the past decade or so (cf. Loporcaro 2005b for detailed discussion). Montreuil (1991:43ff) assumes for minimal pairs like those in (13i.a-b) the structural representations in (16a) vs. (16b-c) (his (10), (11) and (14) respectively):

(16) a. input (and output)form   b. input form   c. output (SRC)
         ['fys] 'were.3SUBJ'   ['fyːz] 'spindle'

Under this view, stressed short vowels are assumed to be followed by moraic consonants underlyingly, whereas long vowels are followed by non-moraic codas. Given the standard moraic representations, this boils down to positing underlying consonant gemination. Vowel length, on the other hand, is derived, as shown in (16c), through the enforcement of a Strong Rhyme Constraint (**SRC**) imposing that all stressed syllables be bimoraic.

Still another explanation of Milanese vowel length, based on foot structure, was proposed by Prieto (2000) (cf. already Prieto 1994:101). Within the framework of OT, Prieto regards length in (13i.a) as forced by a prosodic F(OO)T-BIN(ARITY) constraint, imposing that «Feet should be analyzable as binary» (Prieto 1994:91):

> «The analysis offers a principled motivation for the fact that vowels are only lengthened in final syllables. In particular, the FT-BIN constraint explains why *vowels are lengthened in this context* and stay short when in penultimate or antepenultimate positions.» (Prieto 2000: 270) [emphasis added].

This means that this lengthening applied when the words concerned were already monosyllabic, and they became monosyllabic due to apocope. Clearly, then, lengthening did not preexist; rather, it arose *after* apocope, if not *because of* apocope, as in Repetti's account. In any case, also in this proposal, the link between PRom OSL and Milanese VQ is broken.

Prieto goes even further, since she implicitly denies this link even for dialects like Cremonese, where apocope cannot be responsible for VQ since the contrast is also found in non-apocopated disyllables ((12ii)). According to her proposal, length in Cremonese arose as a product of a prosodic change (that she terms Foot Expansion) *within* the history of that variety:

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9   This analysis formalizes a view that had been upheld before (cf. e.g. Contini 1935:59, Pellegrini 1982:17).

(17) Prieto (1994:92): Foot Expansion in Early Cremonese

	[μ]	[μ μ]	[μμ]
a. Foot Structure	á. <la> 'wing	mó. bi. <le> 'mobile'	vák. <ka> 'cow'
b. Foot Expansion	[μμ]		
[μ] -> [μμ]	á. la	n.a.	n.a.
Output:	[áːla]	[móbile]	[vákka]

7.3.   The method

All these alternative proposals are respectable formalizations of the synchronic phonology of Milanese or Cremonese. However, they also carry over to diachrony, in the proponents' view, as made clear by Prieto's (1994) title ('*Historical* vowel lengthening in Romance'). And here, in the transfer from synchrony to diachrony, they go astray and make up changes which actually never took place in these dialects, as I will demonstrate. The reason why they do so has to do with a dogma (perhaps *the* dogma) of modern formal linguistics, which goes as follows: «exploit the resources of the formalism: it will bring you somewhere». This procedure, which might be appropriate for synchronic analysis, creeps into diachronic linguistics, and this is a problem. To see why, we have to say something about method.

Ever since the rise of synchronic linguistics, this had an impact on the methods for analyzing diachrony. To mention just some prominent episodes, consider Hoenigswald (1950), who introduced into diachronic linguistics, for the reconstruction of proto-languages, the discovery procedure employed by American structuralism to work out the phonemes of a language in synchronic analysis. Or think of Kiparsky (1965), who «introduced the synchronic distinction of competence and performance into the realm of sound change» by distinguishing *innovation* and *restructuring*, as Blevins (2004:66) recently puts it.

This impact, however, also had some drawbacks for diachronic linguistics: sometimes it shaded into colonization, through which procedures of synchronic analysis tend to simply oust those of historical linguistics. This colonization is backed up by the sociological/institutional factors mentioned by Janda & Joseph (2003:129):

> «the study of linguistic change is also being eroded by the steady disappearence of positions once specialized for historical linguistics (e.g., in language departments)».

Actually, one may get the impression that diachrony is all but marginal, lately. For instance, there is a lively ongoing debate on diachronic explanation, stirred by the research program advocated by Blevins (2004) and others, which claims that most synchronic sound patterns require only an historical, and not a synchronic, explanation.[10] However, my point here is not about the theory of explanation, but rather about analytical

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[10]   Kiparsky (2004) and Hyman (2005), among others, convincingly criticize this approach, arguing for the necessity of synchronic analysis in its own right.

procedures. The point can be illustrated with the following well-known passage from Saussure (1922²[1979]:291):

> «tandis que la linguistique synchronique n'admet qu'une seule perspective, celle des sujets parlants, et par conséquent une seule méthode, la linguistique diachronique suppose à la fois une perspective prospective, qui suit le cours du temps, et une perspective rétrospective, qui le remonte».

This distinction has long since found its way into the handbooks. Thus, since diachronic linguistics has two perspectives, any diachronic account must reconcile the evidence coming from reconstruction (*perspective rétrospective*)–which in turn consists of two operations, internal and comparative reconstruction–with the evidence coming from philological inspection of extant relevant records (*perspective prospective*). No serious diachronic account can do without any of the items in this check-list:

(18) a. philological evidence
      b. comparative reconstruction
      c. internal reconstruction

In handbooks of historical linguistics one also finds that

> «IR [= internal reconstruction] is of limited use in historical linguistics; CR [= comparative reconstruction] is so much more reliable that it is preferred whenever possible» (Ringe 2003:244).

Now, the dogma of formal linguistics («exploit the resources of the formalism») implies precisely the opposite procedure: when a synchronically oriented (generative) linguist moves on to analyze diachrony, it is internal reconstruction that takes precedence.[11] The reason for this is also handbook wisdom:

> «IR replicates phonological analysis point for point» (Ringe 2003:246, on final devoicing in German).

In our specific case, application of the basics of the historical method reveals that vowel length in Northern Italian dialects is not the product of any of the changes formalized in the proposals reviewed in §7.2. Both comparative reconstruction and philological evidence, in fact ((18a-b)), tell us that (phonetic) vowel length was there from the outset (i.e. from PRom). Thus, these dialects did not lengthen anything, in spite of the fact that this or that formalism may provide an elegant way to formalize the way a lengthening process *could* have applied.

Morin (2003:130), comparing Gallo-Romance with evidence from Northern Italian dialects, speaks of «différences de durée héritées de l'allongement en syllabe ouverte». In saying so, he adheres to a traditional tenet in Romance linguistics: I will show in §§9-10

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[11]   When the paper was presented orally in Madison, Elan Dresher commented that the MIT doctrine does not exclude either comparative reconstruction or 'prospective' philological evidence from the scope of diachronic linguistics. I repeat my answer here: in the specific case(s) under discussion, it just so happens, and this leads to demonstrably wrong analyses.

that there is no reason to abandon it. After this, the final question will be whether an internal reconstruction ((18c)) is available that is compatible with the philological and comparative evidence, rather than contradicts it.

8. Digression 2: The rise of Raddoppiamento Fonosintattico

Before answering this question, however, I will make a very last detour and briefly discuss a parallel case, the rise of RF in Italian. This shows that much of the work on sound change in Romance (especially within the generative paradigm) over the past few decades actually reduces to internal reconstruction alone, much as in the VQ case.

In Italian, gemination of an initial consonant is regularly triggered when the preceding word ends in a stressed vowel ((19a)). On the other hand, RF is also triggered by a closed list of unstressed monosyllables whose Latin etymon ended in a consonant that got assimilated in external sandhi ((19b)):[12]

(19) a. regular RF: *tu* [d:]*ici* < TU DICIS   'you say' [/ stressed monosyllables _]
      b. irregular RF: *e* [t:]*u*   < ET TU   'and you' [/ unstressed monosyllables _]

Work on RF in Generative Phonology (e.g. Saltarelli 1970, 1983, Vogel 1978, 1982:66ff, Chierchia 1986, Kaye *et al.* 1990:206 etc.) focused on regular stress-conditioned RF, and derived the RF facts by means of a Well-Formedness Constraint on the structure of stressed syllables, the same responsible for the syllable-driven distribution of vowel length considered above in (7). This synchronic analysis has been extended to diachrony (cf. Vincent 1988, Repetti 1991). Regular RF, which is surely core-grammar today, has been claimed to have been there from the beginning, having arisen as a by-product of the collapse of Latin contrastive VQ.

This proves to be wrong, however. Going through the check-list of the relevant kinds of evidence in (18a-c) one discovers that a) irregular RF is attested in the Latin sources, while regular RF is not; and that b) apart from Tuscan, all the remaining dialects showing RF all over Southern Italy and Sardinia actually lack stress-conditioned RF (cf. Loporcaro 1997b).[13] This yields a different internal reconstruction: c) regular RF must have arisen, by reanalysis of the irregular one, during the history of Tuscan, and surely not in the Latin-Romance transition, unlike implied by the abovementioned accounts.

9. Philological evidence for the rise of PRom Open Syllable Lengthening

Back to vowel quantity, we will now go through our check list, considering the philological evidence first. Consentius, a grammarian writing in Gaul in the early 5th century, remarks that OSL was at that time a feature perceived as characteristic for the African pronunciation of Latin. The Africans would say ['piːper], not ['piper] for 'pepper', and the like:

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[12]   This description is a bit simplified for the sake of expository simplicity.
[13]   What Nespor & Vogel (1979:479) claim, in this respect, is false: «While the specific phonological conditions vary to some extent according to region, the one condition that always causes RS in all the dialects in which it occurs is that w₁ ends in a vowel that bears the primary word stress».

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This evidence has been the object of a lively debate that was settled, in my opinion, by Herman's (1982) comparative analysis of metrical inscriptions from Africa and Rome. Studying a corpus of 279 metrical inscriptions from CIL VIII, Herman shows that confusion of long vs. short vowels ((20a)) occurs in Africa, with a random distribution in both stressed and unstressed syllables, at a time in which in Rome ((20b)) this is not yet the case. In Rome (data from a control corpus), until the early 4th century, confusion of long and short vowels is restricted to unstressed syllables. After this point, something happens, and Rome becomes like Africa (20c):

(20)	errors on stressed vowels	total	percent
a.	Africa (1st-early 4th century):	28	27%
b.	Rome (1st-early 4th century):	7	8,6%
c.	Rome (late 4th-6th century):	16	29%

What happened? The obvious candidate is the rise of OSL in stressed open syllables, and the metrical evidence supports this idea. Errors on stressed vowels mostly involve erroneous occurrence of a short vowel where a long one would be required (e.g. *in título clárum* at the end of an hexameter in CIL VIII 9080). Symmetrically, errors on unstressed vowels involve, with more than chance frequency, the occurrence of a long vowel where a short one would be required: 68% in Africa, 47% in Rome, as against an expected random distribution of about 20% (the ratio $\bar{V}:\breve{V}$ in unstressed position being 1:4; cf. Herman 1968:199).[14]

In sum, the results of the analysis of metrical evidence correspond exactly to the description provided by Consentius. This convergence supports the hypothesis of an early rise of OSL in the Latin of Africa and of its subsequent spread to the rest of the Western Empire, before its fall, by the end of the 5th century, a conclusion already reached as early as Schuchardt (1866-68,III:44).

10. The true story of VQ in Northern Romance

The philological evidence, thus, indicates that OSL is inherited. Consequently, we already have a diachronic source for length in Northern Italian dialects, and it is uneconomical to propose alternative ones, unrelated to OSL, as do most current analyses (§7.2).[15] PRom was like today's Standard Italian: subsequently, WRom degemination applied, levelling out

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[14]   Mancini (2001:322) recently argues that Herman's deductions on the rise of OSL are inconclusive, and seconds Pulgram's (1975) opinions on the early loss of VQ. However, in premising «Non staremo ad analizzare i risvolti statistici delle rilevazioni di Herman né tanto meno gli interessanti paragoni tra quanto testimonierebbero le epigrafi metriche rinvenute in Africa e quanto quelle rinvenute in Roma» he escapes the burden of proof that is incumbent on his refutation, as he begs the fundamental question: if Herman's method is not sound, what else can explain the contrast in distribution between Africa and Rome in (20a-c)?

the difference between the two environments in (2a-b) (open vs. closed syllable), and the difference in length became contrastive in the ˈCV(ː)CV environment. This implies that, of the two types in (12)-(13) (Cremonese vs. Milanese), here repeated synthetically in (21a-b), the latter must be innovative with respect to the former, that preserves contrastive length in paroxytones ((21ii.a)):

(21)

			a. Cremonese	b. Milanese
i.	´	]PW	+	+
ii.	´	]PW	+	−

[+ = contrastive VQ in the given environment]

And if it is so, then what we have to explain is not *lengthening* in Milanese, which never took place, but rather *shortening* in Milanese. To flesh out this idea, we now have to check the comparative evidence ((18b)) and propose an alternative internal reconstruction ((18c)).

10.1. The comparative picture

Note preliminarily that the two alternative answers to our question in (14), now repeated in (22), make two opposite predictions concerning vowel systems in the area:

(22) Question [repeated from (14)]: Are the two systems (21a-b) related?
    a. Yes. Two subsequent stages in the same development.
    b. No. Two distinct developments.

All the accounts reviewed in §7.2 can be grouped under (22b): they assume separate developments through which VQ *may have arisen anew*, here and there, within the structural history of these particular systems. Under this view, the expected trend in this area is towards the rise of newly created contrasts. My account (22a) makes the opposite prediction: if the two kinds of systems are related, and if Milanese is innovative, then we are dealing with a gradual fading of contrastive VQ from this area.

This prediction is indeed borne out by the comparative evidence. In fact, all over Lombardy, VQ is beating a retreat, as illustrated by Bergamasco:[16]

(23) Bergamasco (Eastern Lombard; Bernini & Sanga 1987:75, Sanga 1987b:37 fn. 1)
    a. [ˈseːt] < SITIM(-EM)   'thirst'   [ˈsɛt] < SEPTEM   'seven'
       [ˈpeːs] < PE(N)SUM   'weight'   [ˈpɛs] < PEIUS   'worse'

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b. ['nas] < NASUM   'nose'   =   ['nas] < NASCIT   'is born'
   ['tas] < TACERE   'to be silent'   ['tas] < TAXUM   'badger'
   ['pas] < PACEM   'peace'   ['pas] < PASSUM   'step'
   ['kar] < CARUM   'dear'   ['kar] < CARRUM   'waggon'

The pairs of words listed in (23) do not contrast (anymore) in this dialect, that has lost VQ altogether. Note, however, that the corresponding words do form minimal pairs in Milanese:

(24) Milanese (Western Lombard; Sanga 1984:62-63, 1988:292-293)
   a. ['peːs/-z] < PE(N)SUM 'weight'   ['pɛs]   < PISCEM 'fish'
      ['meːs/-z] < ME(N)SEM 'month'   ['mɛs/-z] < MEDIU 'half.M'

   b. ['naːz] < NASUM   'nose'   =   ['nas] < NASCERE   'to be born'
      ['kaːr] < CARUM   'dear'   ['kar] < CARRUM   'waggon'

For mid vowels ((24a)), the quantity contrast in Milanese is combined with a tenseness contrast, along the lines familiar from cross-linguistic surveys: long vowels are tense, short vowels are lax (cf. e.g. Lehiste 1970:30ff). The vowel system of Bergamasco is best analyzed as a further evolution of the Milanese type: as quantity disappears, the contrast in quality still keeps the words distinct if they have a stressed mid vowel (23a). For low vowels, however ((23b)), no difference in quality was there to rescue the distinctions, and merger took place.

    This internal reconstruction for Bergamasco is supported by both philological and comparative evidence. In the 19th century, Tiraboschi (1873[2]:34) still recorded the contrast for long vs. short /a/ only:

    «Coll'accento circonflesso (^) noto le vocali, che hanno un prolungamento di suono. *Nâs*, Naso – *Pâs*, Pace – *Tâs*, Tacere.» [By a circumflex I mark vowels whose sound is prolonged. *Nâs*, nose – *Pâs*, peace – *Tâs*, to be silent.] vs. *nas* 'to be born', *pas* 'pace', *tas* 'badger' (1873[2]:840, 930, 1337); (cf. Sanga 1987a:19);

This contrast, nowadays neutralized in Bergamo ((23b)), is retained to this day in some rural Bergamasco dialects spoken in the nearby Val Cavallina: ['naːh] 'nose'   ['nah] 'is born' (Bonfadini 1987:333, 375).

    Several other Lombard dialects preserve traces of the fading of VQ. For the dialect of Airolo (Alpine Lombard, Val Leventina), experimental measurements by Bosoni (1995:361) show that the vowels in ['cɛr] 'dear' vs. ['car] 'waggon' have approximately the same duration, yet the contrast in vowel quality can be explained only assuming that VQ was distinctive in a previous stage.

    In some other Alpine Lombard varieties, finally, the transition between the Milanese and the Bergamasco type is still observed to be going on today. This is the case in the

dialect of Val Tàrtano, for which Bianchini e Bracchi (2003²) record a residual presence of inherited length, in many words, which is however only optional:

(25)   Val Tàrtano (Valtellina, Alpine Lombard; cf. Bianchini e Bracchi 2003²)
    a. *mö(ö)f* 'to move'   ( )   b. *möff*   'mouldy.MS'
       mö(ö)t 'manner'   ( )   *möt*   'dumb.MS'

If the words in (25a) are realized with a short stressed vowels, they merge with their short-vowel counterparts in (25b).

10.2. Making sense of the comparative picture

The disappearence of VQ in systems like those of Bergamo or of the Alpine varieties considered in §10.1 is the endpoint of a diachronic development which proceded, step by step, from PRom OSL down to modern dialects. We have seen from the philological evidence (§9) that OSL was inherited from PRom. However, this must be relativized a bit. Consider (26):

(26) a. Italian *viene*, French *vient* < VĔNIT; Italian *cuore*, French *coeur* < *CŎR(E)
    b. Italian: *tiepido, Fiesole* vs. *pecora, medico*
       Old French: *oeuvre* < OPERAM, *friemte* < FREMITUM, *fiertre* < FERETRUM; along
       with *tiede/tede/tieve/teve* < TEPIDUM (Morin 2003)

Open syllable diphthongization of PRom /ɛ ɔ/ in Italian and French, a further development of OSL, took place regularly in paroxytones ((26a)), much less so in proparoxytones ((26a)). Northern Italo-Romance dialects are more categorical, as none of them displays any traces of OSL in proparoxytonic words:

(27) a. Milanese (Nicoli 1983:47-58): [ˈpeɡura] 'sheep', [ˈleɡura] 'hare', [ˈstrɔleɡa] 'gipsy.F', [ˈnivula] 'cloud' (also in etymological proparoxytones like [ˈazen] 'donkey');
    b. Ligurian (Ghini 2001:171-2): Genoese [ˈzuvenu] 'young man', [ˈkareɡu] 'load.1SG', [ˈnaveɡu] 'be at sea.1SG'; Savonese [u ˈnaveɡa] 'be at sea.3MSG', [ˈavidu] 'greedy', [ˈarabu] 'Arab'.

Now, after reviewing the comparative evidence, we will first see how its pieces fit together and then propose an internal reconstruction for the rise of the Milanese system, alternative to those in §7.2. The results of our dialect comparison can be schematically represented as follows (pluses in the box stand for both allophonic vowel length and its diachronic successor, contrastive VQ):

(28) prosodic environment:

		i.	ii.	iii.	iv.	length(ening):	
a.	´]PW	+	+	+	−	more natural	
b.	´]PW	+	+	−	−		|
c.	´]PW	+	−	−	−	less natural	|

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Standard Italian (cf. (26) and Table 3 below) can be placed between (28i) and (28ii): in proparoxytones, OSL does not apply as systematically as in paroxytones.[17] Northern Italo-Romance dialects represent further steps within a general drift towards reduction of the structural room for vowel length, along this scale: Cremonese (28ii), Milanese (28iii) and Bergamasco (28iii). As we saw in (27), no NIt dialect has VQ in proparoxytones. This means that Proto-NItRom must have been a system like (28ii), a system that has survived today into the Cremonese type, with contrastive VQ in both oxytones and paroxytones. Then Milanese went a step further, as it eliminated VQ from paroxytones and kept it in oxytones only (28iii). Finally, dialects like Bergamasco went even further and reached stage (28iv), losing VQ altogether.

10.3. A phonetic constraint on vowel length: rhythmical compensation

This scale, which has been reconstructed through dialect comparison, has a straightforward phonetic motivation, which is well-known from experimental phonetics and is schematically represented by the arrow pointing upwards on the right-hand side in (28). As for Standard Italian, the experimental-phonetic literature shows that there is a gradual decrease in stressed vowel length, as the number of syllables to the right of the stressed one increases (cf. Table 3, with data from D'Imperio & Rosenthall 1999:4-8; cf. also Marotta 1985).

[INSERT TABLE 3 ABOUT HERE]

Under a view of sound systems which recognizes a phonology-phonetics interaction, rather than conflation (as argued in §4 above), the substantial/phonetic motivation (the arrow on the right in (28)) will constrain the phonology (the box in the middle), without determining it exhaustively, though (cf. §5 and fn. 4 above). The phonology will impose binary choices on phonetic gradients and yet maintain room for self-organization. It can even impose constraints of its own, not (directly) motivated phonetically, as Hyman (2001) convincingly argues. For instance, in many languages there are quantity-related problems with oxytones. This is part of a broader issue: in fact, there seems to be a conspiracy against assigning prominence to the final syllable in terms of stress, vowel length, and heaviness.

Latin and standard Italian are two cases in point: the former has no final stress, the latter does, but does not allow vowel lengthening word-finally. Mester (1994) captured this conspiracy by means of a markedness scale, further refined by D'Imperio & Rosenthall (1999), to account for Italian as well:

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[17]   Here, a caveat must be added concerning the special status of final syllables: see directly (29).

(29) Markedness scale for final syllables (Mester 1994, D'Imperio & Rosenthall 1999): extrametrical, weak branch > stress > heavy

Northern Italian dialects, however, are very liberal with prominence in final syllables, as they freely allow both stress and heaviness word finally, as shown in (30), where a Milanese minimal pair is provided to show that VQ is contrastive in this position as well:

(30) Final syllables in Northern Italian dialects:
V́ ~ V́ː ~ V́C ~ V́ːC   / __ ##   (Milanese [kanˈta] 'to sing'   [kanˈtaː] 'sung.ᴍ')

Northern Italian dialects, as we have seen, impose restrictions on VQ not at the right edge of the word but rather as one goes further left. And the explanation for these restrictions cannot be yielded by the markedness hierarchy in (29), which is phonological (i.e. it concerns phonology as a self-organizing system). It must come from the phonetics. It is the phonetic universal tendency to rhythmical compensation that explains the diachronic drift (28) comparative reconstruction has revealed. This provides the rationale for our internal reconstruction: Milanese has undergone vowel shortening in paroxytones, thus giving up contrastive VQ in this context, and this is perfectly understandable given the overall picture drawn here.

11. Conclusion

On the empirical side, I hope to have convinced the reader of the plausibility of the reconstruction I have proposed, to elucidate the development of VQ from Latin to Romance. The theoretical implication of this factual conclusion is the following: the simple application of the classical tripartite method of historical linguistics yields better results than diachronic accounts whose highest priority is to validate some specific formalism, but that do not obey the requirements of the historical method as they reduce diachronic phonology to internal reconstruction alone.

I got started in §1 with a personal memory, and I will add another one to conclude. When I presented part of this research at GLOW in Geneva last spring, Larry Hyman commented: «Well, in a way what you are implying is that historical linguistics should be done by historical linguists». I took it as a compliment. This was exactly my point.

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