SYNCOPE IN SPANISH AND PORTUGUESE: THE DIACHRONY OF HISPANO- ROMANCE PHONOTACTICS

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This dissertation examines syncope in the development of Latin to Hispano-Romance (Spanish and Portuguese). Syncope, the loss of certain unstressed word-medial vowels, had a profound effect on the phonotactics of Latin and Romance.

The first part of this dissertation examines the consonantal phonotactics of Latin, Spanish, and Portuguese. Since Latin is a very good reference point for many of the changes which occurred during the development of these two languages, a complete description of the sound pattern of this language is crucial before addressing the issue of syncope. In Chapter 1, a set of phonotactic generalizations are formulated for word-initial, word-final, and word-medial consonants and consonant sequences in Classical Latin. Chapters 2 and 3 investigate the consonantal phonotactics of Spanish and Portuguese, outlining the major structural similarities and differences in the development of these two languages. Word-final stop deletion and apocope (word-final vowel deletion) is also addressed here, and it is demonstrated how the restriction of only sonorants and /s/ to syllable codas (coda condition) constrained the application of apocope (though in different degrees) early on in Hispano-Romance.

Chapters 4-6 address syncope in Spanish and Portuguese from a diachronic perspective. Very painstaking effort has been made in collecting as much data as

possible, from as wide a variety of phonological environments as possible. Electronic corpora such as *Patrologia Latina* for Latin and *Real Academia* for Spanish have been invaluable sources, especially for frequency data. Close attention is paid to the interaction of syncope and obstruent voicing/voiced obstruent deletion as a means to chronologize the development of syncope in Spanish and Portuguese.

Chapter 6 examines the effects found to be significant in syncope. Such effects can be classified as either segmental, syllabic, or phonotactic (attestation). After discussion of these effects, the theoretical implications of this dissertation are examined. In light of the recent interest in Romance syncope within the framework of Optimality Theory (e.g. Hartkemeyer 2000), an OT formulation of some of the constraints found to be significant in Hispano-Romance is given, and two views of phonotactic change (the simultaneous versus stepwise accounts) are evaluated.

BIOGRAPHICAL SKETCH

{Place biographical sketch here.]

This dissertation is dedicated to my loving parents, Lawrence Kennith Lief and Lilli Lief Harris.

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LIST OF ABBREVIATIONS

LANGUAGES/ DIALECTS/ LANGUAGE FAMILIES

AR	Arabic
AL	Astur-Leonese (Hispano-Romance)
BE	Bearnese (Gallo-Romance)
C	Catalan (Hispano-Romance)
CEL	Celtic
CS	Corsican
D	Dalmatian
E	English
EL	Ecclesiastical Latin
EN	(Lower) Engadine (Rhaeto-Romance)
F	French (Gallo-Romance)
FL	Florentine (Italo-Romance)
FN	Friulian (Rhaeto-Romance)
GL	Galician (Hispano-Romance)
GN	Gascon (Gallo-Romance)
GR	Gallo-Romance
GK	Greek
GV	Genovese (Italo-Romance)
HL	Hispano-Latin
HR	Hispano-Romance
I	Italian (Italo-Romance)
IR	Italo-Romance
JF	Judeo-French(Gallo-Romance)
JS	Judeo-Spanish/Mozarabic (Hispano-Romance)
L	Latin
LI	Limousin (Gallo-Romance)
LL	Late Latin
LO	Lombardino (Italo-Romance)
MA	Mallorcan (Hispano-Romance)
MI	Milanese (Italo-Romance)
MN	Mirandese (Hispano-Romance)
ML	Medieval Latin
MO	Mozarabic (Hispano-Romance)
MR	Macedonian Romanian
NA	Navarre-Aragonese (Hispano-Romance)
NF	Northern (Norman) French (Gallo-Romance)
NI	Northern Italian (Italo-Romance)
NO	Northern Occitan (Gallo-Romance)
O	Occitan (Gallo-Romance)
OAL	Old Astur-Leonese (Hispano-Romance)

OBE	Old Bearnese (Gallo-Romance)
OC	Old Catalan (Hispano-Romance)
OEN	Old Engadine (Rhaeto-Romance)
OF	Old French (Gallo-Romance)
OFL	Old Florentine (Italo-Romance)
OGC	Old Gascon (Gallo-Romance)
OGV	Old Genovese (Italo-Romance)
OI	Old Italian
OL	Old Latin
OLO	Old Lombardino (Italo-Romance)
ONA	Old Navarre-Aragonese (Hispano-Romance)
ONF	Old Northern (Norman) French (Gallo-Romance)
OO	Old Occitan (Gallo-Romance)
OP	Old Portuguese (Hispano-Romance)
OPD	Old Picard (Gallo-Romance)
OR	Old Romanian (Daco-Romance)
OS	Old Spanish (Hispano-Romance)
OSD	Old Sardinian
OVE	Old Venetian (Italo-Romance)
P	Portuguese (Hispano-Romance)
PD	Picard (Gallo-Romance)
PGR	Proto-Gallo-Romance
PHR	Proto-Hispano-Romance
PIR	Proto-Italo-Romance
R	Romanian (Daco-Romance)
RO	Romagnolo (Italo-Romance)
RR	Rhaeto-Romance (Sursilvan unless otherwise indicated)
S	Spanish (Hispano-Romance)
SD	Sardinian (following unified orthography set forth by DLS)
SN	Sutsilvan (Rhaeto-Romance)
SI	Southern Italian (Italo-Romance), Sicilian unless indicated
TN	Tuscan (Italo-Romance)
TR	Transmountaine (Hispano-Romance)
VE	Venetian (Italo-Romance)
VA	Valencian (Hispano-Romance)
WC	Western Catalan (Hispano-Romance)

LINGUISTIC

PHONETIC/PHONEMIC

C	Any consonant
N	Any nasal consonant, e.g. [m, n]
L	Any liquid, e.g. [l, r]
G	Any glide, e.g. [j, w]
V	Any vowel
T	Any voiceless stop, e.g. [p, t, k]
K	Any voiceless velar stop, e.g. [k^j, k, k^w]
D	Any voiced stop, e.g. [b, d, g]
G	Any voiced velar stop, e.g. [g^j, g, g^w]
S	Any voiceless fricative, e.g. [f, s]
Z	Any voiceled fricative, e.g. [v, z]

COMMON SOURCES

DCE	*Diccionario crítico etimológico de la lengua castellana* (Corominas, J.1954-1957. Madrid: Gredos.)
DEC	*Diccionari etimològic i complementari de la llengua catalana* (Corominas, J, 1980-1991. Barcelona : Curial)
DELP	*Dicionário etimológico da língua portuguesa* (Machado, José Pedro, 1967-1973. Lisbon: Editorial Confluência)
FEW	*Französisches etymologisches Wörterbuch* (Wartburg, Walther von, 1928-. Bonn: F Klopp Verlag)
REW	*Romanisches etymologisches Wörterbuch* (Meyer-Lübke, W, 1911. Heidelberg: Carl Winter's)

INTRODUCTION

0.1. Introduction

This dissertation examines syncope in the development of Latin to Hispano-Romance (Spanish and Portuguese). Syncope, the loss of certain unstressed word-medial vowels (e.g. CALIDU > S/P *caldo* 'hot', RASICĀRE > S/P *rascar* 'scratch', PLACITU > OS *plazdo*, P *prazo* 'term', COMPUTĀRE > S/P *contar* 'count, tell', MASTICĀRE > S/P *mascar* 'chew') had a profound effect on the phonotactics of Latin and Romance. The first part of the thesis undertakes a thorough descriptive analysis of Latin, Spanish, and Portuguese. In addition to a comprehensive presentation of the sound patterns of these languages, a formulation of the major phonotactic generalizations is also provided in these chapters.

An in-depth study of phonotactics at these several synchronic states facilitates the examination of phonotactic change in the history of Spanish and Portuguese. The effects of other vowel-loss phenomena such as apocope, the loss of certain unstressed final vowels, are also briefly examined in these chapters, with an eye to how this change affected the phonotactics and syllable structure of Hispano-Romance.

The second part of this dissertation is a historical study of syncope in Spanish and Portuguese. Drawing on both primary (particular online corpora) and secondary sources, an extensive syncope database, perhaps the largest to date, was compiled for both of these languages. In Chapters 4-5, these data are analyzed systematically in order to determine precisely in which phonological environments syncope occurred and failed to occur. Close attention is paid to the similarities as well as differences of Spanish and Portuguese, allowing the reconstruction of the original environments most conducive to syncope.

The most crucial insights, however, come not from the contexts in which syncope occurred, but from the contexts in which it failed to occur. The most pressing question in cases of non-syncope is what prevented or disfavored syncope here. A major focus of this dissertation is devoted to determining what constraints interacted with syncope in its spread from Latin to Spanish and Portuguese.

In the concluding chapter, issues relating to the mechanism of phonotactic change are examined. When phonological theories such as Optimality Theory (Prince and Smolensky 1993) are extended to the diachronic domain, phonotactic change is often viewed as occurring in an abrupt or simultaneous manner. For example, the development of COMPUTĀRE > S/P *contar* 'count, tell' can be interpreted as having occurred without any intermediate **[komp.tar.e] stage. On the simultaneous account of phonotactic change, such a form was immediately remedied to fit with existing phonotactic constraints disallowing complex codas such as mp]σ. Some constraints found to be significant in syncope are formulated in OT and applied to the data in Chapters 4-5.

Evaluation of two accounts of syncope couched in OT demonstrates the inadequacy of a simultaneous or telescoped view, and proposes another more gradual or stepwise mechanism of phonotactic change more apt to account for the historical facts. Finally, a complete ranking of these constraints is given for over four synchronic states.

0.2. **The Corpus**

Like many historical studies, most writings to date on Romance syncope suffer one of two problems: (1) Some are scattershot, surveying, usually superficially, far too many languages and missing the major generalizations of any one language (e.g. Grandent 1907; Meyer-Lübke 1890); (2) Others, though smaller in scope, neglect a significant portion of the data (e.g. Hartkemeyer 2000; Harris-Northall 1990; Anderson 1965; Williams 1962, Menéndez-Pidal 1914, 1926). In most cases, however, the first problem implies the second, as most historical Romance manuals are, by definition, large in scope and constrained in terms of quantity of data.

Of these studies, several focus on syncope in Spanish and/or Portuguese. Pensado-Ruíz (1984) examines relative chronology in Spanish historical phonology, offering some discussion of the interaction of syncope and lenition. Unfortunately, her study is more concerned with chronologizing an enormous battery of sound changes than with formulating the phonotactic generalizations and constraints on syncope in Spanish. Nevertheless, the work is a major contribution in terms of its rather large presentation of Spanish data. Harris-Northall (1990) is a short article investigating the spread of syncope in Spanish, with some reference to Portuguese. The crux of this study is to show that syncope was an ongoing process in Latin, Spanish, and Portuguese, not lending itself well to generative descriptions. Although Harris-Northall (1990) does succeed in showing that syncope spread to many more contexts in Spanish than in Portuguese, the study is based on a rather small set of data, and most of the generalizations forged from these data are descriptive in nature, and not tested in any formal theory.

Hartkemeyer (2000) is a dissertation on the representation of vowel loss in Latin, French, Spanish, and Basque in OT. The formal contribution of this thesis is the proposal of a markedness constraint *V, which triggers vowel deletion whenever possible (see Gouskova 2003 for a critique of this view). On the descriptive end, however, the thesis is lacking, and much of the data cited for Vulgar Latin is really Pre-French. Furthermore, the treatment of Spanish does not carefully distinguish the different chronology of many syncopes, e.g. earlier syncope for /sVt/, /rVd/ than for /lVt/, rVt/, etc. (see § 6.5.2 for discussion of many of the problems of simultaneous accounts of syncope).

This dissertation attempts to bridge the three previous studies, by focusing mainly on syncope, examining a manageable number of languages, and drawing on a large body of data. This work is the first of its kind to study in detail both phonotactis and syncope at multiple synchronic states in the history of these two languages. In addition to description of the phonotactic effects in interaction with syncope, the theoretical constraints are formulated and tested within the apparatus of OT.

Painstaking effort has been made to collect as much data as possible, from as wide a variety of phonological environments as possible. Electronic corpora such as *Patrologia Latina* for Latin and *Real Academia* for Spanish have been invaluable sources, especially for frequency data. Due to the lamentable state of searchable electronic corpora for Portuguese, a fair amount of data has been culled from secondary sources. Nevertheless, the close relationship of Spanish and Portuguese has made it quite easy to find forms for Portuguese with the aid of etymological dictionaries.

Often, it was not possible to find data for every possible phonological environment. This was mostly due to gaps in the parent language. In addition, some environments only offer a very limited set of vowels (i.e. /ul/ is much more frequent than /il/), making comparison across environments (i.e. /kil/ to /mil/) difficult if not impossible. In cases like these, conditions were kept constant and comparison was limited to those contexts where only similar conditions hold as best as possible.

0.3. Introduction: Syncope in Hispano-Romance

In Hispano-Romance, only the unstressed non-low vowels /e i o u/ were subject to syncope. Many accounts of syncope in Hispano-Romance sustain that pretonic position in some way behaves differently from posttonic position with respect to syncope (e.g. Pensado-Ruíz 1984, Menéndez-Pidal 1950, Meyer-Lübke 1890). This dissertation offers evidence that word position was not a significant variable in Hispano-Romance syncope.

Syncope could occur in both original C_1VC_2 and $C_1C_2VC_3$ strings.

0.3.1. C_1VC_2 strings

Syncope could occur between two consonants (C_1VC_2) in both Spanish and Portuguese, creating a CC sequence at the deletion site. The resulting CC sequence was either tautosyllabic or heterosyllabic. When a resulting obstruent C_1 could syllabify as onset (i.e. [CV.C_1C_2V]) syncope occurred quite exceptionlessly in both Spanish and Portuguese. The clearest cases of this are before a liquid, particularly /r/, e.g. APERĪRE > OS/OP *abrir* 'open', VETERE > OS *viedro,* OP *vedro* 'old', etc. When a resulting obstruent C_1 syllabified as coda, syncope occurred in both languages when C_1 was a sonorant or sibilant. When a stop (i.e. non-sibilant obstruent) would result in syllable coda, syncope normally only occurred in Spanish, e.g. CUBITU > OS *cobdo*, OP *côvedo* 'elbow', NATICA > OS *nadga*, OP *nádega* 'buttocks'.

This restriction of codas to sonorants or /s/, referred to as the Coda Condition, characterized early Hispano-Romance.

(1) Coda Condition (inviolable in Portuguese)
Only sonorants and /s/ may appear in syllable coda.

As the data above demonstrate, the Coda Condition constrained the outputs of syncope only in Portuguese.

0.3.2. $C_1C_2VC_3$ strings

$C_1C_2VC_3$ strings could undergo syncope in both Spanish and Portuguese. The immediate output formed either a complex coda [$C_1C_2.C_3$], e.g. COMPUTĀRE > *[komp.ta.re] (> S/P *contar* 'count'), or complex onset [$C_1.C_2C_3$], e.g. COMPERĀRE > [kom.prare] (> S/P *comprar* 'buy'). An approximant (or liquid) C_3 is required for the syllabification of any C_2C_3 as a complex onset. When C_3 was a nonapproximant, only a complex coda C_1C_2 was possible.

Whereas C_1C_2 strings were less likely to syncopate when C_1 was a stop (e.g. CUBITU > OP *côvedo* 'elbow'), a $C_1C_2VC_3$ string presenting a C_2 stop were subject to syncope in both Spanish and Portuguese (e.g. COMPUTĀRE > S/P *contar*, MASTICĀRE > S/P *mascar* 'chew', VINDICĀRE > *vengar/vingar* 'avenge', EPISCOPU > S *obispo,* P *bispo* 'bishop'). In all of these examples with a stop (whether labial, coronal, or dorsal) syncope occurred, and the stop eventually deleted.

A number of variables influenced the syncope of a $C_1C_2VC_3$ string. When C_2 was a stop, in cases of syncope, these sequences normally deleted C_2, when a complex coda would have emerged [$C_1(C_2)C_3$], e.g. COMPUTĀRE > *[kom(p).ta.re] > S/P *contar* 'count'. Not all cases of $C_1(C_2)C_3$ containing a medial stop, however, syncopated, e.g. CĒSPITE > S *césped,* P *céspede* 'lawn', HOSPITE > S *húesped,* P *hóspede* 'guest'. These facts suggest that other consonants in the $C_1(C_2)C_3$ string may have played an important role in syncope. In cases like CĒSPITE, since it is clear that syncope could occur when C_2 and C_3 were the stops /p/ and /t/ respectively (cf. COMPUTĀRE > S/P *contar*), the lack of syncope can be attributed to C_1, here /s/. Thus, the potential output */spt/ must have been disfavored. Furthermore, in light of the absence of syncope in VESPERA > OS *viéspera*, P *véspera* 'eve' and all other cases containing /s/ (e.g. MESPILU > OS *niéspero,* OP *nespera* 'medlar tree'), it seems that there was a constraint on /sp/ in Hispano-Romance.

(2) *spC
Syncope leading to the sequence /sp/ always fails to occur.

In contrast, /st/ (pretonic) and /sk/ (posttonic) are possible outputs of syncope (see also below). This suggests, at least tentatively, that a labial C_2 is to some degree disfavored when preceded by /s/.

When C_2 was the sibilant fricative /s/, C_1 normally deleted, e.g. *MEDIPSIMU > OS *me(i)smo/mismo,* P *mesmo* 'same', *FĪXICĀRE > S/P *fisgar* 'harpoon', *VERSICU >

bizgo/vesgo 'cross-eyed'. In all of these cases, however, the C_1C_2 sequence was always subject to assimilation (e.g. URSU > OS/OP *osso* 'bear'), and it is unclear if this occurred prior to syncope.

When C_2 was a sonorant, syncope failed to occur unless C_1C_2 constituted a geminate, e.g. CANNICA > OP *canga* 'yoke'. In the absence of cases of early simplification of the C_1C_2 sequence, the greater resistance to syncope of sequences with a sonorant C_2 is due in part to the constraint on complex codas. In these cases, the sonorant C_2 could not be deleted like a stop C_2, i.e. $C_1(C_2)C_3$, e.g. VERMINE > OS *bierven* 'vermin'.

0.3.3. **The interaction of syncope with other phonological processes**

In historical linguistics, when two or more processes interact, it is often possible to determine the relative order in which such processes occurred historically. In Western Romance, the relative chronology of syncope and lenition (i.e. obstruent voicing/fricativization/deletion) often allows us to draw important conclusions about syncope (see Pensado-Ruíz 1984 for discussion of Spanish).

0.3.3.1. **The interaction of obstruent voicing and syncope**

In most of Western Romance, the voiceless obstruents /p t k f s/ voiced in intervocalic contexts[1], e.g. VĪTA > S/P *vi<u>d</u>a* 'life', STEPHANU > *Este<u>b</u>an*, P *Este<u>b</u>ão* 'Steven'. Since syncope destroys the original intervocalic context required for syncope, if obstruent voicing of a C_2 (or C_3) occurred, it is clear that it must have occurred before

[1] More precisely, voicing occurred when the obstruent occurred between vowel and sonorant, cf. PATRE > S *padre* 'father'.

syncope, e.g. SEMITA > *[semida] > S/P *senda* 'path', DELICĀTU > *[deligado] > S/P *delgado* 'thin' (i.e. VOICE >> SYNC).

(3) Order of voicing

a. SEMITA > *[semida] > S/P *senda* 'path' (VOICE >> SYNC)

b. SEMITA > *[semta] > S/P ***senta* 'path' (*SYN >> VOICE)

Some forms containing an intervocalic context, however, syncopated yet failed to undergo obstruent voicing, e.g. POS(I)TU > S *puesto,* P *posto,* RASICĀRE > S/P *rascar* 'scratch'. Here, syncope preceded (i.e. bled) voicing, i.e. SYN >> VOICE. In the case of POSITU, it is known that this form alternated with the syncopated form POSTU already in Classical Latin.

0.3.3.2. **The interaction of voiced obstruent deletion and syncope**

In both Spanish and Portuguese, the voiced stops /d/ and /g/ deleted when intervocalic. This process is henceforth referred to as voiced obstruent deletion (VOD). It is also possible to draw some important conclusions about the chronology of syncope in these contexts. Because there are very few examples of VOD of /g/, the analysis below takes into account only forms containing /d/.

(4) **The interaction of deletion and syncope**

		Old Spanish	Old Portuguese	
p_(d)	LL CUPIDITIA	*cobdiçia*	*cobiiça*	'greed'
(d)Vk	JŪDICĀRE	*judgar*	*juigar*	'judge'

The two patterns observed above are (1) that syncope bleeds voiced obstruent deletion (i.e. SYNC >> VOD) or (2) that voiced obstruent deletion bleeds any potential syncope (i.e. VOD >> SYNC). Spanish is normally of Type 1 (e.g. *cobdiçia, judgar*), and Portuguese of Type 2 (e.g. *cobiiça, juigar*).

0.4. **Fundamental questions: Phonotactic constraints and syncope**

Setting aside the role of external or sociolinguistic factors, prosody and phonotactics are the phonological variables most often cited in the literature to play some role in Romance syncope. Like any deletion process, syncope occurs in positions of weak prosodic prominence. Minimally, the candidate syllable must be unstressed. Higher prosodic conditions (e.g. word position, footing, etc.) may also influence syncope. In the burgeoning area of phonotactics, segment frequency or attestation has been proposed in several studies on Romance syncope (e.g. Harris-Northall 1991, Anderson 1965) to constrain the structure of output candidates. One goal of this thesis to elucidate which variables were significant in the spread of syncope in Spanish and Portuguese.

Chapters 4-5 systematically examine syncope in Hispano-Romance by phonological environment, paying close attention to the effect of syllable structure and phonotactic constraints on the application of syncope.

When syncope in a particular environment failed to occur in one or both languages, or occurred later than in another environment, it can be said that the conditions of this environment were not conducive to syncope. Chapter 4 identifies these effects in C_1VC_2 strings, and Chapter 5 in $C_1C_2VC_3$ strings. An example of an effect is the mentioned restriction of syncope in C_1VC_2 contexts to a sonorant C_1 or approximant (liquid) C_2. Such effects can be due to more than one syllabic or phonotactic constraint. The above case is syllabic in nature, and due to a Coda Condition constraint limiting codas to sonorants or /s/, and a constraint limiting sonority in complex onsets.

0.5. **Theoretical background**

0.5.1. **The Sonority Hierarchy and Syllable Contact**

Although Chapters 1-3 are primarily descriptive in nature, phonological and phonotactic generalizations are made in terms in sonority and syllable structure. As early as Whitney (1865), Sievers (1876/1881), and Jespersen (1904/1912), it was recognized that the concept of sonority played an important role in consonant syllabification. Selkirk (1984: 116) was one of the first to formulate this observation in modern phonological theory as the Sonority Sequencing Principle.

(5) Sonority Sequencing Principle (Selkirk 1984: 116)

> In any syllable, there is a segment constituting a sonority peak that is preceded and/or followed by a sequence of segments with progressively decreasing sonority values. In order to be well-formed, a syllable has thus to show a specific sonority contour. The centre of the syllable has to constitute a sonority peak and the sonority has to fall to both edges of the syllable.

This formulation and its offshoots all presuppose that segments have different values of sonority, which can be stated in terms of a sonority hierarchy. Although many hierarchies have been proposed since Selkirk (1984), the following relations are usually agreed upon.

(6) Basic sonority hierarchy (Clements 1990: 296)

obstruents < nasals < liquids < glides < vowels

In this universal hierarchy, vowels are the elements of highest sonority and obstruents are the elements of lowest sonority. The only possible modifications of the scale are to either unite adjacent sound classes into one class relevant for sonority or to divide up one class into several adjacent sonority sound classes.

In her study of the English syllable, Selkirk (1982) proposes a structural distinction between normal consonant sequences and /s/ + obstruent.

(3) [obstruent]

s [obstruent]

Although this distinction is based on English, there is also crosslinguistic evidence that /s/ + obstruent sequences are special. Broselow (1992) interprets the different epenthesis patterns of rising sonority sequences versus s + obstruent sequences across languages as a result of this structural difference (i.e. /s/ + obstruent clusters are complex segments, less likely to be broken up by epenthesis). In addition, Gouskova (2001) argues that Russian borrowings into the Turkic language Kirgiz demonstrate this split: peripheral epenthesis in falling and flat sonority onsets, *zveno* 'link' → [**u**zvana], and internal epenthesis in rising sonority onsets, *kvas* 'kvass' → [kbas]. Gouskova (2001: 1) takes this split, with asymmetric epenthesis patterns, to be the result of syllable contact, the preference for sonority to fall across a boundary (Murray and Vennemann 1983, Vennemann 1988):

> While the epenthesis itself is driven by the prohibition on clusters, its site is determined by SYLLABLE CONTACT. Epenthesis in clusters is peripheral (CCV → VCCV) whenever C1 is of higher sonority than C2, but internal (CCV → CVCV) whenever C1 is of lower sonority than C2.

Syllable contact, defined as the preference for sonority to fall across a syllable boundary (Murray and Vennemann 1983), is a constraint on sonority sequencing. In OT, this constraint has been stated as follows in Gouskova (2001: 177):

(7) SYLLABLE CONTACT: Sonority must not rise across a syllable boundary.
(Davis 1998, Hooper 1976, Murray and Vennemann 1983, Rose to appear, Vennemann 1988)

Although Gouskova suggests that this phenomenon may be a property of loanword phonology, there are very clear cases of peripheral epenthesis in native Romance forms, e.g. SCOLA > S *escuel*a, P *escola* 'school', etc. The major difference between Latin and Russian is that Russian has other falling and flat sonority sequences (e.g. /rt/, /zv/) which also display the same peripheral epenthesis as /s/ + obstruent (*rtut'* → [**u**r.tut] 'mercury').

0.6. Outline of thesis

The first part of this dissertation examines the consonantal phonotactics of Latin, Spanish, and Portuguese. In Chapter 1, phonotactic generalizations are formulated for word-initial, word-final, and word-medial consonants and consonant sequences in Classical Latin. Chapters 2 and 3 investigate the consonantal phonotactics of Spanish and Portuguese, outlining the major structural similarities and differences in the development of these two languages. Word-final stop deletion and apocope (word-final vowel deletion) are also addressed here, and it is demonstrated how the restriction of syllable codas to only sonorants and /s/ (coda condition) constrained the application of apocope (though in different degrees) early on in Hispano-Romance.

Chapters 4-5 address syncope in Spanish and Portuguese from a diachronic perspective, paying close attention to the interaction of syncope and obstruent voicing/voiced obstruent deletion. Analysis of these data is used to chronologize the development of syncope in Spanish and Portuguese.

Chapter 6 summarizes the phonotactic effects formulated in Chapters 4-5, and examines how current phonological theories such as Optimality Theory (Prince and Smolensky 1993) treat syncope and phonotactic change.

CHAPTER 1

THE PHONOTACTICS OF CLASSICAL LATIN

1.1. Introduction

This chapter examines the consonantal phonotactics of Classical Latin. As early as Old Latin, stop sequences of different points of articulation were of fairly restricted distribution. Such restrictions may suggest a coda condition, similar to that discussed by Steriade (1982) and Itô (1986) for Greek. As Coté (2000) points out, however, the strategy which Latin employs to prevent the occurrence of pre-obstruent coronal stops differs significantly from Greek. In Latin, many geminates are the result of the assimilation of a coronal stop to a following obstruent, e.g. **sitkos* > *siccus* 'dry'. Unlike Greek, though, this occurs before both coronal and non-coronal obstruents.

The following section begins with an introduction of the phonemes of Latin. Then the consonantal phonotactics of Latin is examined with respect to word position, i.e. word-initial, word-final, and word-medial.

1.2. The sounds of Latin

The consonant inventory of Classical Latin contained only 13 consonant phonemes, given below.

Table 1 **Consonant Phonemes**

	Bilabial		Labio-dental		Dental		Alveolar		Velar		Glottal	
Stop	p	b			t	d			k	g		
Fricative			f				s				h	
Nasal		m						n				
Lateral								l				
Rhotic								r				

In Classical Latin, a three-place phonological distinction obtained: labial, coronal (i.e. dental/alveolar). and dorsal (i.e. velar). In contrast to early Romance (see Chapters 2-3), there were no palatal or palatalized consonants during the Classical period of Latin. Only in Late Latin did the velars /k/ and /g/ develop to palatal affricates before front vowels.

In regard to manner of articulation, only stops, fricatives, and sonorants (i.e. nasals, liquids, and glides) occurred. Much ink has been spilled debating whether or not Latin possessed the labiovelars /k^w/ and /g^w/ (for perhaps the most thorough discussion of the issue to date see Devine and Stevens 1977). For now, it is sufficient to take note of the distributional facts, which will be scrutinized below.

Though not very robust to begin with, /h/, thought to be glottal rather than velar, deleted in Latin, e.g. *habeo* /abeo/ 'I have'. Evidence from Catullus (Poem 84) demonstrates that by the first century B.C this change had already begun. As for the liquids, /r/ was most likely the tap [ɾ], and /l/ of the clear variety found in French or Italian. The Latin grammarians, however, did distinguish several types of /l/—Lloyd (1987) points out that their terminology is not so easy to interpret—so we should merely admit that there was likely much variability. Evidence from Western Romance suggests that there was velarization in preconsonantal contexts, e.g. ALTERU > S *otro*/P *outro* ‘other’.

In addition to simple consonants, Latin also possessed distinctive geminates word-medially (Lathrop 1984, Lloyd 1987, Penny 1991).

Table 2 **Contrastive Consonantal length**

	Singleton		**Geminate**	
a. Obstruents				
/p/	*caput*	‘head’	*cippus*	‘stake’
/t/	*vīta*	‘life’	*vitta*	‘bandage’
/k/	*vacā*	‘empty!’	*vacca*	‘cow’
/b/	*ibī*	‘there’	*gibbus*	‘hump’
/d/	*aditus*	‘entrance’	*additus*	‘added’
/g/	*ager*	‘field’	*agger*	‘wall’
/f/	*dē-fensus*	‘defended’	*officīna*	‘workshop’
/s/	*casa*	‘hut’	*cassa*	‘empty-FEM’
b. Sonorants				
/m/	*flāmen*	‘gust’	*flamma*	‘flame’
/n/	*anus*	‘ass’	*annus*	‘year’
/l/	*palam*	‘openly’	*pallam*	‘dress-ACC’
/r/	*ferum*	‘wild’	*ferrum*	‘iron’

Latin possessed the following five vowel phonemes.

Table 3 Vowel Phonemes

i				u
	e		o	
		a		

In addition, Latin had two glides [j] and [w]. Whether these glides are, in fact, synchronically derived from the corresponding high vowels /i/ and /u/ is another unresolved issue of Latin phonology. The distribution of [j] is limited to initial and intervocalic position (e.g. *peius* [pej.jus] 'worse'), where it is thought that the glide had a geminate or ambisyllabic realization. Original post-consonantal [j] was eliminated by palatalization and vowel epenthesis in the history of Latin, e.g. PL **pedjos* > *peius* 'worse', PL *moljer* > *mulier* 'woman'. Likewise, [w] only occurs after the velars and liquids. Whereas the confinement of /w/ only to post-velar contexts may be due to the mentioned possibility that these sequences were in fact simplex labiovelars, the confinement of [w] to post-liquid contexts has historical explanations (i.e. syncope took place here, e.g. PL **arawom* > *arvum* 'field').

(8) CG Sequences

Velar stop + w	kw, gw
Liquid + w	lw, rw

As is the case with consonants, distinctive length doubles the inventory of vowels to ten phonemes (Lathrop 1984, Lloyd 1987, Penny 1991).

Table 4 **Contrastive vowel length**

Short			**Long**	
/a/	*malum*	'bad-NEUT/ACC'	*mālum*	'apple'
/e/	*levis*	'light'	*lēvis*	'smooth'
/i/	*liber*	'book'	*līber*	'free'
/o/	*os*	'bone'	*ōs*	'mouth'
/u/	*furīs*	'you're angry'	*fūris*	'thief-GEN'

We now turn to consonant sequences, considering first word initial, word-final, and then word-medial positions.

1.3. Word-initial consonants and consonant sequences

The following phonemes occurred word-initially in Latin.

Table 5 **Word-initial consonants**

p	**t**	**k**	
b	**d**	**g**	
f	**s**		
m	**n**		
	l, r		
			(h)

	p	t	k	b	d	g	f	s	m	n	l	r	h
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WF	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

As Table 5 illustrates, all possible consonant phonemes are found in word-initial (WI) position. The lesser restrictions on word-initial consonants occurs across languages, and is due to the robust phonetic cues of prevocalic consonants, with burst noise and formant transitions on the following vowel, often absent in preconsonantal and word-final (WF) position. This universal tendency is also observed in Spanish and Portuguese (Chapters 2 and 3). Most but not all phonemes occur in word-medial (WM) position. Word-final and word-medial positions are discussed in § 1.4 and § 1.5.

Word-initial and word-final syllabification is rather straightforward, since word-initial sequences can only syllabify as (complex) onsets, and word-final sequences can only syllabify as (complex) codas. Given that word-internally both options are available, however, word-medial syllabification is more complicated.

Table 6 below illustrates what C_1C_2 sequences occurred in Latin. Similar tables are also given for word-final and word-medial positions. Natural classes (e.g. obstruent + liquid) are enclosed by bold borders. This helps to identify patterns and gaps.

Table 6 **Word-initial C_1C_2 sequences**

C_2

C_1

	p	**t**	**k**	**b**	**d**	**g**	**f**	**s**	**h**	**m**	**n**	**l**	**r**
p												pl	pr
t													tr
k												kl	kr
b												bl	br
d													dr
g											(gn)	gl	gr
f												fl	fr
s	sp	st	sk										
h													
m													
n													
l													
r													

As the table shows, two types of word-initial CC sequences are robust: /s/ + stop and obstruent + liquid. In addition, only voiceless stops could follow the sibilant /s/, and only the nonsibilant obstruents /p t k b d g f/ could precede a liquid.

(9) Wellformed word-initial CC classes

/s/ + (voiceless) stop

(nonsibilant) obstruent + liquid

There is one notable gap in obstruent + liquid sequences: only noncoronal stops occured before /l/. The absence of such /tl/ and /dl/ clusters is quite common cross-linguistically (English, for example, lacks them word-initially).

(10) Word-initial noncoronal stop before /l/:

plus	'more'
blandus	'soft'
clavis	'key'
gladius	'sword'

(11) Word-internal noncoronal stop before /l/:

duplus	'double'
publicus	'public, common'
pōclum	'cup'

(12) Coronal stop before /r/:

trēs	'three'
arātrum	'plow'
Drusus	'proper name'
cuadra	'square table'

Like obstruent + liquid sequences, /s/ + stop sequences were quite frequent in Classical Latin. However, /s/ could not precede a voiced stop (e.g. */sb/, */sd/, */sg/) anywhere in Latin.

(13) Only voiceless stops may follow /s/:

sp	*spes*	'hope'	*sb
st	*stercus*	'manure'	*sd
sk	*scūtum*	'shield'	*sg

While it is clear that obstruent + liquid sequences obey the Sonority Sequencing Principle, requiring that the center of the syllable constitute a sonority peak which falls in sonority to both edges of the syllable (see § 0.2.1), /s/ + stop is not so straightforward. Otherwise stated, obstruent + liquid sequences, and, though quite restricted, stop + nasal (i.e. /gn/[2]) sequences constitute rising sonority onsets, while /s/ + stop sequences constitute falling sonority onsets, which clearly violate the Sonority Sequencing Principle. *A priori*, it is not clear why other falling sonority onsets like liquid + stop (*/rp/, */lt/) and nasal + stop sequences (*/mp/, */nt/) failed to occur in Latin.

Since the sibilant /s/ has significantly more acoustic energy (and presumably higher sonority) than other non-sibilant fricatives such as /f/, it is not surprising that it is the only fricative found in pre-stop position (e.g. */ft/). This pattern is observed across languages. As for syllable-internal structure, recall the disagreement in regard to /s/ + obstruent sequences (§ 0.1.2). If Selkirk's argument that /s/ + stop is a complex segment is accepted, then the fact that only /s/ and not /f/ can combine with stops is explained. This view, however, seems rather *ad hoc* when languages other than English are examined. For instance, crosslinguistic assymetrical epenthesis patterns (Gouskova 2001) and word-medial syllabification in Latin and Romance (§ 1.5.1) suggest that sonority is a more accurate predictor of clustering patterns. That is, /s/ + stop constitute an onset of

[2] The sequence /gn/ appears only in several words (e.g. *gnārus* 'skilled', *Gnaius* 'proper name'), many of which possess alternate forms in /n/ (e.g. *gnoscō* ~ *noscō* 'know'). Many authorities claim that /gn/ was confined to the literary language (Lloyd 1993), which may be correct, but there is really no reason to rule out the influence of orthography or morphological alternations like *co-gnoscō* 'recognize', where /gn/ would have been preserved word-internally. In such cases, it seems almost certain that /gn/ exists underlyingly, despite the tendency to delete the stop by either a phonological or phonetic process.

falling sonority, while fricative + stop (e.g. /fp/, /ft/) and other fricative + fricative sequences (e.g. /sf/, /fs/) would presumably constitute onsets of flat sonority.

1.3.1. Word-initial $C_1C_2C_3$ sequences

In addition to word-initial biconsonantal /s/ + stop and stop + liquid sequences, triconsonantal /s/ + stop + liquid sequences could also occur in Latin.

(14) Initial /s/ + stop + liquid sequences

sprētor	'despiser'
strictus	'tight'
scribo	'write'

The fricative /s/ could precede any of the permitted stop + liquid sequences seen above, provided that the obstruent was one that /s/ could normally precede (i.e. voiceless and noncoronal).

(15) Word-initial /s/ + stop + liquid sequences

spr	*spretor*	'despiser'
str	*strictus*	'tight'
skr	*scribo*	'write'
spl	*splendidus*	'bright'
skl	*scloppus*	'slap'

Note that although perusal of any Latin dictionary will nevertheless yield several forms presenting initial /s/ + stop + /l/, these sequences were very infrequent, as illustrated from the frequency data below[3].

(16) Adapted from Devine and Stevens (1977)

Phoneme	Frequency
spr	1
spl	4
str	20
skr	33

It is interesting to note that [skwr] or /sk^{w}r/ is not among these sequences. If /k^w/ were in fact a complex segment, this would be expected. When /s/ co-occurs with [kw], no other consonant may follow.

(17) Word-initial /skw/

/skw/ *squāma* 'scale'

The phonotactic generalizations discussed above are summarized below.

(18) Generalizations (word-initial position)

Except for /s/ + stop, all onsets must rise in sonority (i.e. *rt, *nt, *pt, *sf, etc.).

/s/ can precede any voiceless stop.

The pre-nasal stop /gn/ occurs but is very infrequent.

[3] In regard to /stl/, this sequence reduced to /l/ in Classical Latin (e.g. OL *stlis* > *lis* 'fight'), although still appearing on occasion in several fixed legal expressions (Lindsay 1894). The original form *stloppus* had the variant *scloppus* (> Italian *schioppo*), yet this word was rare.

Only noncoronal stops may precede /l/.

In CCC sequences, /s/ is always the first C (/s/ + stop+ liquid or [skw])

1.4. **Word-final consonants and consonant sequences**

While all 13 Latin consonants occurred in word-initial position, only 10 could occur word-finally. Missing from final-position are /g/, /f/, and /h/.

Table 7 **Word-Final Consonants (Latin):**

(p)	**t**	**k**
b	**d**	
	s	
m	**n**	
	l, r	

	p	**t**	**k**	**b**	**d**	**g**	**f**	**s**	**m**	**n**	**l**	**r**	**h**
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WF	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

The fact that the inventory of final consonants is smaller than word-initial consonants is consistent with crosslinguistic trends. The tighter restriction on word-final consonants has been attributed to the fact that phonetic cues (e.g. stop burst, formant transitions) are more robust in prevocalic contexts. According to Jacobs (1989), all consonants but the labiovelars /kw/, /gw/, /f/, and /h/ may appear word-finally[4]. He attributes the absence of these segments to both universal tendencies (for /h/) and language history (for /f/). It is likely that the absence of labiovelars here may be due to their status as complex segments. Although the weak perceptual salience of /h/, of course,

[4] Although the current analysis regards the labiovelars as biphonemic, it is still true that labiovelars only occur in word-initial, and though quite infrequently, in some postconsonantal positions.

is one factor in its deletion or neutralization in languages known to possess the segment at least underlyingly in syllable coda, it is also the case that absence here is an accident of the history of Latin

In Table 8 below, examples of all occurring consonant phonemes are given.

Table 8 **Word Final Consonant Phonemes**

Obstruent	
Labial	
p	*volup* 'with pleasure'
b	*ab* 'from', *sub* 'under'
Coronal	
t	*amat* 'loves', *caput* 'head'
d	*ad* 'to', *sed* 'but also'
s	*amās* 'you love', *trēs* 'three'
Dorsal	
k	*ac* 'but', *dīc* 'tell!', *lac*[5] 'milk', *nec* 'nor'
Sonorant	
Labial	
m	*cum* 'with', *hominem* 'man-ACC', *num* 'now'
Coronal	
n	*in* 'in', *lumen* 'light'

[5] Genitive *lactis* instantiates /lakt/ here.

l	*animal* ‘animal’, *vel* ‘or’
r	*pār* ‘equal’, *soror* ‘sister’

Although both voiced and voiceless stops may appear underlyingly in word-final position, there are some further restrictions.

There is some evidence that Latin may have had final devoicing. Latin orthography, however, often obscures the situation. That is, function words like the prepositions *ab* ‘from’, *ad* ‘to’, *ob* ‘toward’, *sub* ‘under’ were always rendered with the voiced stops <*b*> or <*d*>, while the conjunctions *ac* ‘but’, *donec* ‘while’, *nec* ‘nor’, *at* ‘and’, *et* ‘and’ were consistently spelled with the voiceless stops <k> and <t>.

Furthermore, it is known that /p/ only appears in one word *volup* ‘with pleasure’. Jacobs (1989) correctly points out that word final stops are very scarce outside of function words like *ab, ad, et,* and the inflectional ending *–t*. Since only content words can appear in word-final position (i.e. prepositions or prefixes like *ab(-), ad(-e)*, etc. never occur at the end of a prosodic word), it is clear that voiced stops never occurred in (prosodic) word-final position.

Furthermore, the coronal segments /t d s n l r/ account for about 70% of all word-final consonants.

(19) Final consonant (C) frequency (adapted from Devine and Stevens, 1977)

Phoneme	% all final C	Phoneme	% all final C
b	.8663	m	27.8681
t	21.2723	n	5.4652
d	4.8030	r	5.4786
k	1.9868	l	1.0369
s	31.2228		

In Chapters 2 and 3, it will be shown how this preponderance of coronal consonants continued to gain ground into early Romance.

1.4.1. Word-final C_1C_2 sequences

In Table 9, all occurring word-final CC sequences are given.

Table 9 **Word-Final C_1C_2 Sequences**

C_1 \ C_2	p	t	k	b	d	g	f	s	h	m	n	l	r
p								ps					
t													
k								ks					
b													
d													
g													
f													
s		st											
h													
m								ms					
n		nt	nk					ns					
l		lt						ls					
r		rt											

As Table 9 illustrates, there are three general types of word-final CC sequences: sibilant/sonorant + /t/, nasal + stop, and consonant + /s/.

(20) Wellformed word-final CC classes

sibilant/sonorant + (voiceless coronal) stop

nasal + (voiceless) stop

consonant + sibilant

Otherwise formulated, ignoring morpheme boundaries for now, Latin allowed complex codas if C_1 was either a sonorant or the sibilant /s/ and C_2 was an obstruent, or if C_1 was either a noncoronal stop or sonorant and C_2 was the fricative /s/. It is clear that stop + stop sequences never surfaced in word-final position.

These phonotactic generalizations are summarized below.

(21) Generalizations (word-final CC)

Only /t/ may follow a sibilant or sonorant.

A voiceless stop may follow a nasal.

/s/ can follow noncoronal stops and sonorants.

*stop + stop sequences never surface.

Examples of word-final CC sequences (surface) are given below.

Table 10 **Examples of Final C_1C_2 Sequences**

C_2 = Labial

none

C_2 = Coronal

st	*ast* 'but' (poetic), *est* 'is', *ēst* 'eats', *post* 'after'
nt	*sunt* 'are'
lt	*vult* 'wants'
rt	*fert* 'carries'

C_2 = /s/

ps, bs	*stips* 'gift', *caelebs* 'unmarried' (GEN *stipis, caelibis*)
ts, ds	
ks, gs	*dux* 'duke', *rex* 'king' (GEN *ducis, regis*)
ms, ns	*hiem(p)s* 'winter', *quotiens* 'how many'
rs	*pars* 'part' (GEN *partis*)

C_2 = Dorsal

mk, nk	*hunc* 'him', *nunc* 'now' (*hum, num*)

C_2 = Sonorant

none

The lack of codas of rising sonority (e.g. /kn/, /kl/, /kr/, /kw/), next to codas containing two obstruents (e.g. /ks/ or /st/) is in line with the Sonority Sequencing Principle. Assuming that the fact that /s/ patterns with the sonorants reflects its higher sonority explains the wellformedness of the falling sonority coda /st/ and not flat sonority stop + stop codas, e.g. */kt/. This view, however, runs into problems when rising sonority codas (/ks/) are compared to falling sonority codas (/st/), since rising codas like /kr/ and

/ks/ ought to behave the same. Recall that a similar dilemma occurs word-initially, i.e. */rt/ in contrast to /st/. Thus it seems that minor violations of the Sonority Sequencing Principle are tolerated, especially at word-edges.

Although the sonorants and /s/ could precede stops, there are some evident gaps. First, only voiceless stops could follow. At the time of Classical Latin, /t/ and /k/ are the only stops permitted postconsonantally. This agrees with the restriction on word-final /p/ (§ 1.4). After a non-nasal consonant, there is a further restriction of the stop to coronal /t/. Thus, we find liquid + /t/ sequences like *vult* and *fert*, yet no liquid + /p/, /k/ sequences, e.g. **vulp* or **ferc*. This is one very interesting fact, since it will be seen in the discussion of CCC sequences below that such sequences could occur when /s/ followed, e.g. *urbs* /rbs/ [rps] and *falx* /lks/. (22) illustrates these gaps.

(22) Gaps in word-final sibilant/sonorant + stop sequences:

*sp	*mp	*lp	*rp
st	nt	lt	rt
*sk	nk	*lk	*rk

While any sonorant could precede /t/, /nk/ (i.e. [ŋk]) was the only word-final sonorant + /k/ sequence, and there are no cases of nasal + /p/. This highly suggests that a stop in word-final position must be homorganic with a preceding sonorant. Notice the wellformedness of /nt/, /lt/, /rt/, and /nk/ next to the absence of /lp/, /rp/, /lk/, and /rk/. It is known that nasals are often less restricted than other sonorants because of their susceptibility to place assimilation. Homorganicity, then, may aid in the perception of word-final stops, which are often unreleased and bereft of internal cues (i.e. stop burst). On this account, however, the absence of /mp/ is left unexplained, but this could of course be an inherited gap.

Table 11 below presents some examples of word-final sibilant/sonorant + stop.

Table 11 **Word-Final /s/ and Sonorant + Stop:**

C_2 = Labial		
none[6]		
C_2 = Coronal		
st	*post*	'after, behind'
nt	*sunt*	'they are'
lt	*vult*	'he wants'
rt	*fert*	'he carries'
C_2 = Dorsal		
nk	*nunc*	'now'

The above data depicts a fairly limited set of surface clusters. In reality, the set of underlying consonant sequences is much larger. Otherwise stated, not all underlying word-final CC sequences surface in Classical Latin. The forms below all delete an underlying C_2 when word-final, yet alternate with forms containing the full C_1C_2 sequence in word-medial position. The historical reason for this is that either C_2 deleted word-finally, e.g. PIE **dlakt* > *lac* 'milk', **kord* > *cor* 'heart', or a preconsonantal coronal C_1 deleted **lit(i)s* > *lis*, but not word-medially, i.e. in other case forms like the genitive *lactis*/*cordis*/*litis* (Sihler 1995: 230).

(23) *CC#

[6] OL *nemp(e)* 'truly' apparently in Plautus (Sihler 1995).

	C(C)#	(CC)	
/kt/	*lac*	*lactis*	‘milk’
/nd/	*dein*	*deinde*	‘from there’
/rd/	*cor*	*cordis*	‘heart’
/ts/	*lis*	*litis*	‘fight’
/ds/	*palus*	*paludis*	‘swamp’
/ss/	*os*	*ossis*	‘bone’
/ll/	*mel*	*mellis*	‘honey’
/rr/	*far*	*farris*	‘spelt’

While the paradigms for the nouns *lac* /lakt/ and *cor* /kord/ had numerous forms which surface with the sequence, the adverb *dein* and *deinde*[7] were putatively in free variation. The [s] in *os* was short in Classical Latin, yet the geminate did occur throughout the paradigm. The above analysis, of course, depends on one’s choice of underlying forms. However, the assumption of some type of lexical relationships for these paradigms rather than suppletion motivates these biphonemic sequences on some level.

Underlyingly, then, Latin had a rather restricted set of word final stop + stop (e.g. *lac*<*t*>), stop + /s/ (e.g. *stips*), /s/ + stop, and sonorant/sibilant + stop (e.g. *post*, *vult, fert*) sequences.

Table 12 **Word-Final Sequences (Underlying)**

$\mathbf{C_1}$	$\mathbf{C_2}$
stop	**stop**
k	t

[7] This is secondary /nd/, stemming from apocopated /deinde/.

stop	**sibilant**
p, t, k	s
sonorant/sibilant	**stop**
s	t
m, n	t, k
l, r	t, d

The difference between underlying (i.e. root) CC sequences and actual surface forms is quite great, as seen below.

Table 13 **Word-Final Sequences (Surface)**

C_1	**C_2**
stop	**sibilant**
p, k	s
sonorant/sibilant	**stop**
s	t
m, n	t, k
l, r	t

As seen in Tables (12-14), underlying stop + stop sequences never surface. Furthermore, only the voiceless coronal stop /t/ surfaces after a non-nasal. Whereas coronal is the preferred place in postconsonantal position, only the noncoronal stops could precede /s/, i.e. *ts, *ds. Jacobs (1989) treats the Latin surface constraint against /ts/ as a case of Wetzels' (1989) universal "Preconsonantal Coronal Decolorization Principle." Wetzels (1989) treats Yakut gemination in C_1C_2 sequences where C_1 is a coronal stop as a language-specific instantiation of a universal tendency for preconsonantal coronals to lose their place features. According to Jacobs, the absence of sequences containing a preobstruent coronal stop /t/ or /d/ (e.g. *ts, *ds, *tp, *dp, etc.) is due to this tendency.

Yip (1989) refers to this crosslinguistic tendency as the limit of at most one Place specification per sequence. Assuming that coronals are placeless, this condition excludes more than one noncoronal per cluster. Furthermore, in C_1C_2 sequences, C_2 must always be coronal, i.e. all stop + obstruent sequences were of the shape noncoronal + coronal. Note that geminates (e.g. /kk/), fricative + stop sequences (e.g. /sk/), and homorganic nasal + stop sequences (e.g. /nk/) were not subject to these two conditions. According to Yip's account, restricting place to the leftmost consonant (and if placeless, then to the rightmost) captures this generalization.

(24) Latin Cluster Condition (adapted from Yip 1989)

Only a non-coronal stop may appear before an obstruent; the second obstruent is always coronal.

The basic idea behind the Latin Cluster Condition is the same as the Preconsonantal Coronal Decolorization Principle. The main difference is that the Latin Cluster Condition is a theory of Place specification and assignment, which better explains the absence of two-noncoronal sequences.

In Latin, then, deletion is the language-particular instantiation of this condition, if and only if an underlying /t/ or /d/ can be motivated (e.g. in /lits/). The principle, furthermore, explains the nonoccurrence of other sequences like *tp, *tk, which, it might be added, existed early on in Latin, e.g. **sitkos* > *siccus* 'dry', and may perhaps be motivated in the grammar of Classical Latin (see Coté 2001, Steriade 1983).

The constraint against sequences like *nd and *rd as well as the word-final geminates suggests a general *Complex Coda type constraint. However, the occurrence of sequences like /st/, /nt/, /nk/, etc. would be exceptions to such a constraint. Therefore, it is not likely that any syllabic or prosodic constraint would be able to account for the different behavior of /nt/ and /nd/.

One important issue to keep in mind is whether these are phonotactic generalizations or the result of phonological or perhaps phonetic processes such as assimilation. If the constraint *coronal + consonant is reflected in more than one way in the phonology of Latin, this seems to offer evidence that there were “active” constraints against certain word-final biconsonantal sequences in Latin. In order to formulate these constraints, it is first necessary to examine CCC sequences.

1.4.2. Word-final $C_1C_2C_3$ sequences

The nominative singular marker /s/ could be added to any any root ending in a sonorant + stop,. When the root-final stop was noncoronal, no changes took place.

(25) Word-final sonorant + /ks/:

coniunx	‘spouse’
falx	‘sickle’
arx	‘fortress’

(26) Word-final sonorant + /ps/:

hiemps	‘winter’
stirps	‘stem’

Thus non-homorganic sonorant + stop sequences were permitted when /s/ followed[8] .

[8] Notice that, except for the gap of /l/ before /p/, any sonorant may precede a stop. Again, the idiosyncrasies of clusters with /p/ may be a historical accident. It should also be noted that PIE lacked /b/.

In roots ending in a sonorant + /t, d/, the coronal stop was deleted, in line with the constraint on preconsonantal coronals. Before other vowel-initial case suffixes, no deletion took place. The first form given in (27) is the nominative (word-final) and the second is the genitive (word-medial).

(27) *CCC#

	$C_1(C_2)C_3$#	C_1C_2	
/kts/	*nox*	*noctis*	'milk'
/nts/	*mons*	*montis*	'mountain'
/lts/	*puls*	*pultis*	'porridge'
/rts/	*pars*	*partis*	'part'

Examples of occurring sonorant + stop + /s/ sequences are given in (14)

Table 14 **Word-Final Sonorant + Stop + /s/ Sequences**

C_2 = /p/		
mps	*siremps*	'the same'
*lps		
rps	*stirps*	'stem'
	urbs	'city'
C_2 = /t/		
*nts		
*lts		
*rts		

C_2 = /k/		
nks	*coniunx*	'spouse'
lks	*falx*	'sickle'
rks	*arx*	'fortress'

C_2 = /b/

*mbs

*lbs

*rbs

C_2 = /d/

*nds

*lds

*rds

C_2 = /g/

*ngs

*lgs

*rgs

By virtue of these observations, the following word-final CCC sequences occur underlyingly in Latin. Asterisked members of a class are unattested.

(28) Word-final sequences (underlying)

$\mathbf{C_1}$	$\mathbf{C_2}$	$\mathbf{C_3}$
*p,*t, k *s		

m, n	p, t, k	
l, r	b, d, g	s

Only sonorant + stop + /s/ sequences could surface, with the added condition that the stop not be coronal and voiceless. Otherwise, the coronal deleted, and a CC sequence surfaced, or the stop devoiced, e.g. *urbs* [urps] 'city'.

(29) Word-final sequences (surface)

C	**C**	**C**
sonorant	stop	/s/
m, n	p, k	s
l, r		

In addition to the abovementioned nonoccurrence of /s/ + voiced stop (e.g. *sb) and preconsonantal coronal (e.g. *tp, *ts) sequences, the following gaps occurred.

(30) Structural gaps (CCC#)

*pts
*sps, *sts, *sks
*mbs, *ngs
*lps, *lbs, *lds, *lgs
*rds, *rgs

The occurrence of roots ending in /kt/ but not /pt/ may have a historical explanation, e.g. the markedness of labials in Indo-European. Nevertheless, this contributed to a higher markedness of labials in Latin as well.

The following word-final sequences were possible in Latin.

Table 15 **Word-Final Sequences**

CC#	stop	p, k + s
	nasal	m, n + s
	sibilant	s + t
	sonorant + stop	n, l, r + t n + t, k
CCC#	sonorant + stop + /s/	n, r, l + k + s
		m, r + p + s

Table 15 demonstrates that word-final stop + stop sequences were not wellformed in Latin. Furthermore, only noncoronals could precede /s/. The remaining CC sequences consisted of a sonorant + obstruent. CCC sequences were created when /s/ was added to a root ending in sonorant + stop. These generalizations are summarized below.

(31) Generalizations (word-final position)

*stop + stop

Only noncoronal stops may precede /s/.

Non-homorganic word-final sonorant + stop sequences were permitted when followed by /s/ (e.g. rps, *rts, rks).

We now turn to word-medial consonants and consonant sequences.

1.5. Word-medial consonants and consonant sequences

The only difference in consonant distribution word-initially versus word-medially is that /h/ and /f/ only occur word-medially after an internal morpheme boundary, e.g. *pre-hendere* ‘seize’, *de-fensus* ‘defense’.

Table 16 **Word-Medial Consonants**

	p	t	k	b	d	g	f	s	m	n	l	r	h
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WF	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

In Table 17 all occurring word-medial CC sequences are given. Very infrequent sequences are parenthesized.

Table 17 **Word-Medial Consonant Sequences**

C_2
C

C_1

	p	**t**	**k**	**b**	**d**	**g** $_2$	**f**	**s**	**m**	**n**	**l**	**r**	**h**
p		pt						ps			pl	pr	
t									(tm)	(tn)	(tl)	tr	
k		kt						ks			(kl)	kr	
b											bl	br	
d												(dr)	
g												gr	
f												fr	
s	sp	st	sk										
m	mp			mb						mn			
n		nt	nk		nd	ng	(nf)	ns					
l	lp	lt	lk	lb	(ld)	lg		ls	(lm)	(ln)			
r	rp	rt	rk	rb	rd	rg	rf	rs	rm	rn			
h													

Thus the following classes were permitted word-medially:

(32) Welformed word-medial CC classes

sibilant + (voiceless) stop

consonant + (voiceless coronal) stop

consonant + sibilant (/s/)

(nonsibilant) obstruent + liquid

sonorant + nonapproximant

Since /s/ was the only sibilant and /t/ was the only coronal stop in Latin, it may make more sense to make these generalizations more fine-grained. For this reason, more specific classes have been given in parentheses. In Chapters 2 and 3, however, it is shown that in phonological systems with more robust contrasts, classes such as sibilant and nonapproximant (i.e. obstruents + nasals) are instantiated.

All of the patterns observed word-initially and word-finally also obtain word-medially. For instance, all of the /s/ + stop and obstruent + liquid sequences permitted word-initially could also occur word-medially. Stops and sonorants could also precede /s/ both word-finally and word-medially.

In word-medial position, however, the trends were often more general than elsewhere. Whereas only the sonorants and /s/ could precede the stop /t/ in word-final position, noncoronal stops could also precede /t/ word-medially, e.g. /pt/, /kt/. The sonorants and /s/ could also precede most stops, not just /t/ word-medially. In contrast to word-initial and word-final positions, pre-obstruent stops could occur word-medially, provided that the first stop was not coronal.

(33) Word-medial noncoronal + coronal (obstruents)

pt	*septem*	'seven'
ps	*ipse*	'he himself'
kt	*octō*	'eight'
ks	*coxa*	'hip'

(34) Noncoronal + coronal across a morpheme boundary:

ob#tineo	'hold on to'
ob#duco	'bring over'
ab#surdus	'out of tune'

On the other hand, coronal stops could not precede other obstruents, and two noncoronal stops could not co-occur, as discussed in § 4.1.

(35) Unattested preconsonantal coronal and noncoronal + noncoronal sequences

*tp	*db	*pk
*tk	*dg	*gb
*ts	*ds	

From Table 17, it is clear that the following natural class or feature combinations were also not possible.

(36) Unattested sequences

stop + nasal	*[pn], *[tn], *[kn], etc.[9]
sibilant + voiced stop	*[sb], etc.
fricative + fricative	*[fs], *[sf]
fricative + nasal	*[fm], *[sm], etc.

[9] The sequence /gn/ is realized as /ŋn/, e.g. *signum* 'sign'.

fricative + lateral	*[fl], *[sl]
nasal + liquid	*[ml], *[nl], *[mr], etc.
glottal + consonant	*[hp], *[ht], etc.
consonant + glottal	*[ph], [th], etc.

Comparison of permitted word-initial and word-medial sequences reveals both sonority (or natural class) and segmental differences. This is examined in the next section.

1.5.1. Word-medial sonority and syllabification

Based on stress and metrical evidence from Classical Latin poetry, most authorities (e.g. Allen 1973) agree that the word-medial sequences were syllabified in the following manner.

Table 18 **Sonority and Syllabification of CC Sequences**

Flat sonority

stop + stop	[p.t]	*septem*	‘seven’
nasal + nasal	[ŋ.n]	*signum*	‘sign’

Falling sonority

sibilant + stop	[s.t]	*hasta*	‘spear’
nasal + stop	[n.t]	*ante*	‘before’
lateral + stop	[l.t]	*altus*	‘high’
rhotic + stop	[r.t]	*porta*	‘gate’
nasal + fricative	[n.s]	*mensa*	‘table’
lateral + strident	[l.s]	*falsus*	‘false’
rhotic + strident	[r.s]	*persona*	‘person’
rhotic + nasal	[r.n]	*perna*	‘ham’
lateral + nasal	[l.n]	*ulna*	‘elbow’

rhotic + lateral	[r.l]	*per-laetus*	'very happy'[10]

Rising sonority

stop + sibilant	[p.s]	*ipse*	'he himself'
stop + lateral	[.pl]	*duplus*	'double'
stop + rhotic	[.pr]	*stuprum*	'rape'
fricative + rhotic	[f.r]?	*vafra*	'sly-FEM'

Except for stop + liquid sequences, all word-medial CC sequences are heterosyllabic. Within these [C.C], all sonority contours (flat, falling, and rising) are found in Latin. Recall that rising sonority across a syllable boundary is disfavored by the principle of syllable contact (§ 0.2.1). Otherwise stated, a coda more sonorous than a following onset is preferred. Stop + liquid sequences are not subject to this restriction because they are syllabified in the same syllable. The remaining heterosyllabic rising sonority sequences (e.g. [p.s], [f.r]?), however, appear to violate syllable contact.

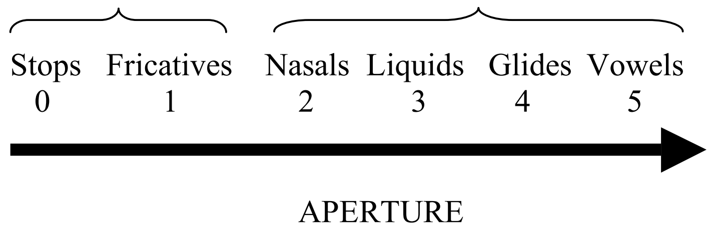
While stop + liquid sequences are indeed tautosyllabic, Allen (1973) claims that fricative + rhotic sequences (namely /fr/) are not. Meter apparently supports this syllabification (e.g. *vafra* [waf.ra] 'sly, fem.'). If this analysis is correct, the question is why these sequences syllabify differently from stop + liquid, especially when they violate the principle of syllable contact.

Working with the Saussurian concept of aperture, Allen (1973:137-39) notes that the distance between stop + liquid sequences (3 units) is great enough to license the two segments in the same syllable (tautosyllabicity), while that of fricative + liquid sequences (2 units) is not. The following chart is based on such observations.

(37) Aperture (based on Allen 1973)

Obstruents Sonorants

[10] This biphonemic form is not included in Table 17.



On this account, any consonant sequence that does not rise at least the interval from stop to liquid (i.e. three units) will be heterosyllabic. Thus stop + /s/ sequences which rise a distance of only 1 unit (e.g. *ipse* 'he himself') are heterosyllabic. Furthermore, stop + stop sequences (e.g. *septem* 'seven') of the same aperture (i.e. flat sonority) must be heterosyllabic. Another way of looking at this is that coda-onset syllable contact must be greater than 2. That is, slight syllable contact violations are tolerated. Severe violations like [p.r], however, are not permitted and are remedied by tautosyllabification.

(38) Condition for tautosyllabicity (based on Allen 1973):
Given a C_1C_2 sequence, when the distance between of C_2 is at least three units greater than that of C_1, C_1 will always be syllabified with C_2 in syllable onset, i.e. $[.C_1C_2]$.

All cases of falling sonority contours (e.g. [s.p], [r.p], [r.n], [r.l]) obey the principles of sonority sequencing and syllable contact. While stop + stop and stop + /s/ sequences are not found in word-initial position, /s/ + stop sequences are indeed very common both word-initially and medially. Since the aperture or sonority distance between /ps/ and /sp/ is the same, more than distance alone is needed to account for this differentiation. While some interpret the occurrence of word-initial falling sonority sequences like /sp/ and not rising sonority sequences like /ps/ or flat sonority sequences like /pt/ as due to the fact that /s/ + stop is a complex sequence similar to an affricate like

/ts/ (Selkirk 1982), others propose that sonority violations are sometimes tolerated at word edges[11].

1.5.2. **CCC sequences**

Obstruent + liquid sequences could also follow either a sonorant or an obstruent. Although words containing two consecutive stops followed by a sonorant such as those below in (40) are admittedly rare, when attested, these sequences always fully obeyed the Latin Cluster Condition.

(39) Obstruent + liquid following a sonorant

centrum	'center'
cancrī	'crabs'
ultra	'beyond'
fulcrum	'fulcrum'
dēsertrix	'deserter-FEM'

(40) Obstruent + liquid following an obstruent

asprēta	'rough terrain'
castrum	'fort'
corruptrix	'corruptor-FEM'
actrix	'actress'

Postconsonantal labial stop + liquid sequences were quite rare, but did occur, e.g. *Sempronius*, *scalprum* 'chisel', *membrum* 'member'. Other than /mpl/ (e.g. *exemplum*

[11] See Coté (2001) for discussion of these theories and an alternate view.

‘example’) and a few very rare and probably later examples like *Hercle* ‘by Hercules!’, *exanclāre* ‘lift anchor?’, postconsonantal stop + /l/ was also infrequent. Furthermore, the restriction of only voiced stops after /s/ is upheld in CCC sequences, e.g. /spr/, but not */sbr/.

In contrast to word-initial position, /s/ + stop sequences could follow a consonant word-internally. The Preconsonantal Coronal Decolorization Principle (§ 1.4.1) prohibits postconsonantal /ts/ sequences here. Furthermore, /s/ + voiced stop could also not occur here, e.g. */rsb/, etc.

(41) Posconsonantal /s/ + stop sequences

depstus	‘?’
sextus	‘sixth’
instans	‘present, immediate’
sōlstitium	‘summer solstice’
superstitiō	‘superstition’

In addition, all permitted stop + stop sequences (i.e. noncoronal + coronal) could follow a sonorant. However, there are no attested voiced stop sequences (/bd/, /gd/), which is in line with the restriction of such sequences to borrowings or learned words (e.g. *abdomen*).

(42) Sonorant + stop + stop

temptāre	‘tempt’
sanctus	‘saint’
scalptor	‘carver’
carptus	‘seize, part.’

Except for /mbr/, voiced stops could not occur as the medial (C_2) consonant in any CCC sequence (Devine and Stevens 1977: 153). Table 19 presents all of the above generalizations.

Table 19 **Word-Medial CCC Sequences**

C		**C**		**C**
sibilant/sonorant	+	obstruent	+	liquid
s m n l r		p t k (f)		l r
stop	+	sibilant	+	stop
(p) k (m) n l (r)		s		(p) t (k)
sonorant	+	stop	+	stop
m n l r		p k		t

Table 19 illustrates the discussed restrictions on stops. That is, postconsonantal stops are always voiceless and limited to /t/ after an obstruent, e.g. *sextus* 'sixth', never ***sexpus*, etc. This constraint is laxed between two sonorants, where all three places occur, e.g. *cancrī* 'crabs', *fulcrum* 'fulcrum'. By virtue of the Cluster Condition, only noncoronal stops could occur before a following stop, e.g. *temptāre* 'tempt', ***tentpāre.*

In Classical Latin, there were many verbs and participial adjectives which presented morphophonemic alternations similar to the type found in word-final CCC sequences.

Table 20 ***CCC**

$C_1(C_2)C_3$			
/lpm/	*pulmentum*	‘appetizer’	(~ *pulpa* ‘lean meat’)
/rpm/	*sarmentum*	‘twig’	(~ *sarpō* ‘prune’)
/mbt/	*am-termini*	‘outliers’	(~ *ambi-* ‘around’)
/kts/	*nexus*	‘tie-PART’	(~ *nectō*)
/nts/	*sensus*	‘feel-PART’	(~ *sentiō*)
/skt/	*pastus*	‘to pasture-PART’	(~ *pascō*)
/nkt/	*quīntus*	‘fifth’	(~ *quinque* ‘five’)
/lkt/	*mul(c)tus*	‘stroke-PART’	(~ *mulceō*)
/rkt/	*fartus*	‘stuff-PART’	(~ *farciō*)
	sartus	‘repair-PART’	(~ *sarciō*)
/lks/	*mulsī*	‘stroke-PERF’	(~ *mulceō*)
/rks/	*farsī*	‘stuff-PERF’	(~ *farciō*)
	sarsī	‘repair-PERF’	(~ *sarciō*)
/lkm/	*fulmentum*	‘prop’	(~ *fulciō* ‘prop’)
/rkn/	*quernus*	‘of oak’	(~ *quercus* ‘oak tree’)
	urna	‘pot’	(~ *urceus* ‘pot’)
/rdk/	*corculum*	‘sweetheart’	(~ *cor<d>* ‘heart’)
/nds/	*prensus*	‘seize’	(~ *prendō*)
/rds/	*morsus*	‘bite’	(~ *mordeō*)
/rdn/	*ornō*	‘equip’	(~ *ordō* ‘line’)
/lgs/	*indulsus*	‘grant-PART’	(~ *indulgeō*)

/rgs/	*sparsus*	'scatter-PART'	(~ *spargō*)
/ngn/	*cognoscō*	'know-PERF'	(~ *con*- 'with')

As seen with word-final CC sequences in § 1.4.2, the set of underlying CCC sequences was also larger than those actually surfacing. In word-medial contexts, a stop occurring between two consonants was deleted.

Similar to the reduction of word-final geminates seen in 1.4.2, a geminate reduced word-medially when followed by another consonant.

(43) Word-medial geminate reduction

/lls/	*volsus/vulsus*	'pluck hair-PART'	(~ *vellō, vellus* 'fleece')
	salsus	'salt-PART'	(~ *sallō*)

1.5.3. **CCCC sequences**

The two types of CCCC sequences found word-internally are consonant + /s/ + stop + liquid and sonorant + stop + stop + liquid sequences. Note that <x> represents /ks/.

(44) Consonant + /s/ + stop + liquid

subscribō	'sign'
extra	'outside'
monstrum	'sign'
superstruō	'build on top'

The only possible internal stop + stop + liquid sequences occur after a sonorant.

(45) Stop between a sonorant and stop + liquid sequence

contemptrix ‘despiser-FEM’

mulctra ‘milk pale’

Table 21 **Word-Medial CCCC Sequences**

C		**C**		**C**		**C**
sonorant	+	stop	+	stop	+	liquid
m (n) l (r)		p k		t		r
consonant	+	sibilant	+	stop	+	liquid
(p) k (m) n (l r)		s		(p) t (k)		r

As seen in Table 20, the same restrictions on postconsonantal stops are observed in CCCC sequences. Furthermore, the constraint on postconsonantal stop + /l/ is always upheld in CCCC sequences.

1.6. **Chapter conclusions**

All of the generalizations formulated in this chapter are summarized below. In Chapters 2 and 3, it will be seen that many of these generalizations also held and hold for

Spanish and Portuguese as well. There were, however, many later sound changes, which had the effect of greatly simplifying the consonantal phonotactics of Ibero-Romance. These alterations are the topics of Chapters 2-5.

Table 22 **Latin Phonotactic Generalizations**

0. Stops are allowed word-initially, word-internally, and word-finally.

CC Sequence

1. A non-coronal stop may precede /l/.

2. Only a voiceless stop may follow the fricative /s/.

Word-initially

3. There are no pre-obstruent stops.

4. There are no post-nasal stops.

Word-internally

5. Only a non-coronal stop may appear before an obstruent; the second obstruent is always coronal (i.e. only non-coronal+coronal clusters).

6. A stop may always follow a sonorant.

Word-finally

7. A stop may never follow another stop.

8. /t/ is the only stop which may follow the fricative /s/.

CHAPTER 2

THE PHONOTACTICS OF OLD SPANISH

2.1. Introduction

This chapter examines the phonotactics and syllable structure of Old Spanish, starting with the consonant inventory of Old Spanish. It is useful to distinguish at least three distinct tperiods: pre-Spanish (before the 12th century), early Old Spanish (12th and 13th centuries), and late Old Spanish (14th and 15th centuries).

Pre-Spanish is reconstructed mostly from the scant documentation we possess from the 11th century. The texts that are known to us from this period are from different areas of the kingdom of Castile, which already seem quite differentiated linguistically. In Menéndez-Pidal's monumental *Documentos Lingüísticos de España: Reino de Castilla* (1919), for instance, Document 71 (1044 AD, Rioja Alta, San Millán de la Cogolla) is written in a mixture of Latin and local Castilian vernacular. Such influence of Latin in most early notarial documents and glosses tend to mask the phonology of the vernacular. As a case in point, my study of the above document, due to its extremely Latinate character, revealed no real insights into what the word-final phonotactics would have been during this early phase of Old Spanish.

Early Old Spanish is less problematic, as 12th century documentary evidence from many regions in Castile is rich. Document 73 (1150, Rioja Alta, San Millán de la Cogolla), the same origin as Document 71, but some one hundred years later, offers several clearly Romance forms which have undergone apocope (e.g. *(d)el* '(of) the', *fer* 'make', *corral* 'corral', *portal* 'doorway').

Late Old Spanish approximates pre-Spanish and modern Spanish in many respects. In the 13th century, the ongoing sound change of *apocope extrema* (the laxing of the word-final coda place restrictions) comes to a fairly rapid halt due to a surge in Castilian nationalism with King Alphonse the Wise in the vanguard (Lloyd 1951)[12]. From this point on, word-final codas, and for the most part word-medial codas, are almost the same as in standard modern Spanish, with a few selectional differences in the lexical and/or grammatical component (e.g. some 3rd person verb forms like *diz* 'says', *tien* 'has', *val* 'is worth', *quier* 'wants', for later *dize/dice*, *tiene*, *vale*, *quiere*, and the reduced clitics *l(e)* and *s(e),* e.g. *dal* 'give to him', *ves* 'is seen', obligatorily separate syllables in modern Spanish). With the halt of the apocope trend, paradoxically Late Old Spanish returns to the state of affairs that had existed early on in pre-Spanish.

Since our focus is on early Ibero-Romance phonotactics, only pre-Spanish and early Old Spanish will be examined in this chapter. Though textual evidence is indeed scarce for pre-Spanish, it is important to start our study of phonotactics here.

2.2. **The sounds of Old Spanish**

Based on both internal and comparative reconstruction, it is generally agreed that Old Spanish possessed the following 24-25 consonants.

[12] *Apocope extrema* was thought to be a mark of French influence on the Castilian vernacular, and on this account was ultimately reversed.

Table 23 **Old Spanish Consonants**

	Bilabial		Labio-dental		Dental		Alveolar		Palatal		Velar	
Stop	p	b			t	d					k	ɡ
Affricate							ts	dz	tʃ	dʒ		
Fricative		(β)	f	v		ð	s	z	ʃ	ʒ		ɣ
Nasal		m				n						
Lateral								l		ʎ		
Rhotic							ɾ	r				

Not all of these sounds were distinctive. Of these sounds, 22 were most likely phonemes, i.e. the fricatives [ɣ], [ð], and perhaps [β] were allophones of /g/, /d/, and [b] respectively. Lenition, the cover term given to several processes (i.e. voicing, spirantization/fricativization, and deletion) is perhaps the phonological process which most drastically altered the consonant inventory of Latin. In early Romance, the voiced stops /b d g/ came to be realized as [β ð ɣ] intervocalically. The Latin labials best illustrate this.

(46) "Lenition" (adapted from Penny 1991)

Latin		Old Spanish	Modern Spanish	
CUPPA	*copa*	[kopa]	[kopa]	'wine glass'
CŪPA	*cuba*	[kuba]	[kuβa]	'wine vat'
CIBU	*cevo*	[tseβo]	[θeβo]	'food, bait'

Recall that Latin possessed both singleton and geminate consonants. As illustrated above, Latin /pp/ was simplified to [p], /p/ was voiced to [b], and /b/ was weakened to [β] in intervocalic position. The remaining stops and the fricatives /f s/ were also affected by these processes. The sonorants /m n l /, lacking a voice distinction, behave somewhat differently from the obstruents, as illustrated below, but all in effect lose their length contrast.

(47) Sonorant development (adapted from Penny 1991)

Latin		Old Spanish	Modern Spanish	
FLAMMA	*llama*	[ʎama]	[ɟama]	‘flame’
ANNU	*año*	[aɳo]	[aɳo]	‘year’
CABALLU	*caballo*	[kaβaʎo]	[kaβajo]	‘horse’
CARRU	*carro*	[karo]	[karo]	‘cart’

As illustrated above, nasals and laterals degeminate. The geminate rhotic is retained, but as a trill. The geminates /nn/ and /ll/ developed to simplex palatals early on, distinguishing Spanish from Portuguese, cf. P *cavalo* [kavalu] and *ano* [anu].

In word-initial and often morpheme-initial contexts, /f/ also developed the allophone [h], e.g. FARĪNA > *farina/harina* ‘flour’. The other fricative /s/ developed like all obstruents, voicing to [z] word-medially.

Table 24 **Old Spanish Consonant Phonemes**

p	**t**		**k**
b	**d**		**g**
	ts	**tʃ**	
	dz	**dʒ**	
f	**s**	**ts**	
v	**z**	**ʒ**	
m	**n**	**ŋ**	
	r, l	**ʎ**	

In our treatment of Old Spanish, four places of articulation are crucial, i.e. labial, dental/alveolar (or anterior coronal), "palatal", and velar (or dorsal), in light of phonological evidence that the dental and palatals pattern differently (§ 2.3.2).

It should be noted that /b/ and /v/ (< CL [w]) came to merge in the history of Spanish. The merger had already taken place intervocalically in all of Romance. Only word-initially and postconsontally was the distinction retained early on in Spanish, but the frequent etymological use of <b> versus <v> (or <u>) masks the situation here (see Ariza-Viguera, 1992 for details).

As for medieval orthographic conventions, it should be noted that <ç> normally represented /ts/, and <z> /dz/. Like other obstruents which were voiced intervocalically, however, this distinction was probably neutralized in word-final position after apocope took place (see section 2.3.2), e.g. VERITATE > **verdade* > *verdat/verdad* 'truth', VOCE > **boze* > *boç/boz* 'voice', etc.

Table 25 **Vowel Phonemes**

i				u
	e		o	
		a		

The distinctive vowel length of Latin was lost in Late Latin and Romance, with some qualitative adjustments among the short/lax vowels (i.e. /i/ > /e/, /u/ > /o/) However, diphthongization (e.g. SEPTE > *siete* 'seven', FONTE > *fuente* 'fountain') and other processes such as consonant deletion (i.e. VCV > VV, e.g. LEGE > *ley* 'law') extended the inventory of VV sequences.

Like most modern Spanish varieties, Old Spanish had two glides [j] and [w]. Both could occur in syllable onset and coda.

Table 26 **Vowel Sequences**

VG	
aw, aj, ej	*sauce* ‘willow’, *aire* ‘air’, *peine* ‘comb’, *ley* ‘law’
GV	
je, jo, ja	*fierro* ‘iron’ , *apio* ‘celery’, *lluvia* ‘rain’
we, wa, wo	*bueno* ‘good’, *santiguar* ‘sanctify’, *santiguo* ‘I sanctify’
GVG	
wej	*buey* ‘ox’

Homorganic diphthongs (i.e. *[ji], *[uw]) were not possible, and [wo] could occur only within verbal paradigms (e.g. the root *santigu-* ‘sanctify’), where there is evidence that it could reduce to [o], i.e. *santigo ~ santiguo*).

In word-initial and syllable-initial position, another allophone of /j/ exists in standard modern Spanish, e.g. *ya* [ʝa] or [dʒa] ‘already’, *mayo* [maʝo] ‘May’. Although it is possible to derive this segment from underlying /i/, it seems more likely that it is a separate phoneme. Whether it is /ʝ/, /dʒ/, or even /j/ is, of course, open to analysis. In light of the phoneme inventory of Old Spanish, and especially the robust contrast between voiceless palatal fricatives and affricates (i.e. /ʃ tʃ/), it seems very likely that the corresponding voiced contrast existed as well (i.e. /ʒ dʒ/). By conceding phoneme status to /dʒ/ in Old Spanish, this thesis sidesteps the ongoing debate in the phonological literature regarding the phoneme status of the palatal in the above words.

2.3. Consonantal phonotactics

This section examines the consonantal phonotactics of Old Spanish. In § 2.3.1, word-initial consonant distribution, the least restricted of all word positions, is discussed.

After an overview of the consonant phonemes occurring word-initially, CC and CCC sequences are examined. A concise survey of the major developments affecting Latin word-initial consonant and consonant sequences is also presented. § 2.3.2 discusses word-final phonotactics. As seen in Chapter 1 with Latin, the inventory of wellformed CC and CCC sequences is much smaller than those occurring word-medially. Careful attention is paid to the changes affecting Latin and Old Spanish word-final consonant distribution (i.e. apocope). § 2.3.3 examines word-medial consonant phonotactics.

2.3.1 **Word-initial consonants and consonant sequences**

The following consonant phonemes occurred in word-initial position.

Table 27 **Word-Initial Consonants:**

p	t		k
b	d		g
	ts	tʃ	
	dz	dʒ	
f	s	ʃ	
(v)		ʒ	
m	n	ɳ	
	l, r	ʎ	
			(h)

	p	t	k	b	d	g	f	tst	tʃ	dz	dʒ	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	ɾ
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓		✓		✓	✓	✓
WF					✓		✓	✓		✓			✓					✓	✓	✓		✓
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓

Recall that /v/ and /b/ merged word-medially in all of Romance. Most of Romance retains the distinction, however, in word-initial position, e.g VITA > OP *vida*

/vida/ 'life' ~ BIBERE > *beber* /beber/ 'drink'. In Spanish, however, word-initial /v/ or /β/ developed, despite a tendency to retain Latin orthographic conventions. For instance, there is only one case of *bida* 'life' (< VITA), next to over 2000 cases of *vida* or *uida* in the RAE corpus before the 14th century. In contrast, *boda* 'wedding' (< VŌTA) occurs over 40 times, as opposed to only 4 instances of *uoda*. It seems as if orthography triumphed in very frequent words, perhaps due to literacy.

Since Latin /s/ voiced to [z] intervocalically in most of Western Romance (e.g. CASA > OS/P/C/OO *ca*[z]*a* 'house'), when /ss/ degeminated, this [s] ~ [z] alternation became unpredictable and phonologized, i.e. *casa* /kaza/ vs. *passo* /paso/'step'. During the Golden Age (16th to 17th centuries), this contrast was lost in favor of /s/, i.e. both *casa* and *paso* with /s/.

Although Classical Latin had only one rhotic, presumably the tap [ɾ], Spanish strengthened this tap to the trill /r/ in word-initial (e.g. *rojo* 'red') and postconsonantal syllable-initial positions (e.g. *alrededor* 'around', *Enrique* 'Henry'). Since most of Ibero-Romance shares these distributional facts, it seems possible to reconstruct the same for Old Spanish. In fact, Old Spanish orthography often doubles this consonant, e.g. *Enrrique*.

2.3.1.1. **The development of Latin (C)CC sequences in Spanish and Portuguese**

Recall that word-initial sequences in Latin were limited to /s/ + stop, obstruent + liquid, and [(s)kw]. In their transmission to Ibero-Romance, these sequences suffered numerous alterations.

In all of Western Romance, prosthesis of /e/ changed the syllabification of all /s/ + consonant sequences. The phonological status of /s/ + consonant in Old Spanish is not clear. Some argue for a productive process of insertion for modern Spanish (e.g. Harris

1983). For now, it should just be noted that /s/ + consonant always surfaces as a heterosyllabic sequence (e.g. *escudo* [es.ku.do]).

(48) Word-initial /s/ + consonant sequences:

	Latin	Spanish	Portuguese	
sp	SPĒRĀRE	*esperar*	*esperar*	'hope, wait'
st	STUDIU	*estudio*	*estudo*	'study'
sk	SCŪTU	*escudo*	*escudo*	'shield'
sf	SPHAERA	*esfera*	*espera/esfera*	'sphere'
sm	SMARAGDU	*esmeralda*	*esmeralda*	'emerald'

When /s/ preceded obstruent + liquid, the development was the same, i.e. prosthesis. In this case, the result is a heterosyllabic /s/ + obstruent + liquid sequence, e.g. [es.kri.to]. The charts below give Latin, Spanish, then Portuguese forms.

(49) Word-initial /s/ + obstruent + liquid sequences:

spl				
stl	STLOPPU			'slap'
skl	SCLAVU	*esclavo*[13]	*escravo*	'slave'
sfl				
spr				
str	STRICTU	*estrecho*	*estreito*	'narrow'
skr	SCRĪPTU	*escrito*	*escrito*	'write-PART'
sfr				

[13] This word is learned, appearing once in the RAE corpus before the 15th century.

Latin /(s)kw/ sometimes lost its labiovelar element before the back vowel /a/. Germanic borrowings with word-initial /w/, which had developed to [gw], however, retained the glide in the same context, suggesting that the deletion process probably operated before the large influx of Germanicisms in the fifth century.

(50) Word-initial [kw] and [gw] +V[+back]

kw	QUATTUOR QUATTUORDECI	*quatro* *catorze*	*quatro* *catorze*	'four' 'fourteen'
gw	GMC WARDŌN	*guardar*	*guardar*	'to guard'

(51) Word-initial /s/ + [kw] + V[+back]

skw	SQUAMA	*escama*	*escama*	'scale'
	SQUALU		*esq(u)alo*	'shark'

The traditional explanation for the different development of forms like *quatro* and *catorze* is that [w] deleted when before unstressed /a/. There are, however, some exceptions to this claim, e.g. *quarenta* 'forty'. In the case of [skw], Williams (1938: 64-65) also makes the claim that /w/ deleted only when pretonic. In order to account for *escama,* he assumes that SQUAMĀRE > *escamar* 'to scale' represents the regular development, and *escama* was derived from this verb. However, DCE[14] and DELP both register *escamar* quite late, and at least in the case of Spanish, it appears that the original meaning of *escamar* 'to resent, suspect' suggests another origin. Furthermore, DELP registers *esqualo* very late (17th and 18th century), and the earliest form is apparently

[14] See DCE for the issue of SQUALIDĀRE (S *escalio/cuajo*).

escallo, with loss of /w/ in a stressed syllable. If this is true, then, it is clear that deletion here is not conditioned by stress.

In Spanish, as in Latin, the coronal stops /t/ and /d/ could not precede the lateral /l/. In addition, certain changes affect obstruent + /l/ in the history of Spanish and Portuguese. The most common one is the palatalization of voiceless obstruents followed by /l/ to /ʎ/ in Spanish (<ll>) and /tʃ/ in Portuguese (<ch>). In the voiced counterparts, the stop deletes in both languages (see Lloyd 1993 [1987]: 361-2; Penny 1991:82-84 for more discussion).

(52) Word-initial voiceless obstruent + /l/ sequences:

pl	PLUVIA	*lluvia*	*chu(i)va*	'rain'
kl	CLAVE	*llave*	*chave*	'key'
fl	FLAMMA	*llama*	*chama*	'flame'

(53) Word-initial voiced obstruent + /l/ sequences:

bl	BLITU	*bledo*	*bredo*	'type of vegetable'
	BLASPHEMARE	*lastimar*	*brasfemar*	'blaspheme, hurt'
*dl				
gl	GLAREA	*lera*	*leira*	'gravel'
	GLAND(IN)E	*landre*	*lande*	'acorn'
	GLATTĪRE	*latir*		'beat (of heart)'
	GLIRE	*lir(ón)*		'dormouse'

These developments did not affect the phonotactics of Spanish and Portuguese for long, as a number of forms corresponding to original Latin obstruent + /l/ sequences (whatever and whenever their origin) appear early on in both languages. It is apparent that Spanish tolerates obstruent + /l/ more than Portuguese, where even learned forms such as *flor* alternate with forms such as *frol* early on (see Chapter 3).

(54) Word-initial obstruent + /l/ sequences:

pl	PLAGA	*playa*	*praia*	'beach'
	PLŪMA	*pluma*	*pluma*	'feather'
kl	CLAVU	*clavo*	*cravo*	'nail'
	CLASSE	*clase*	*clase*	'class'
fl	FLACCU	*flaco*	*fraco*	'weak'
	FLŌRE	*flor*	*flor*	'flower'
bl	BLASPHEMARE	*blasfemar*	*blasfemar*	'blasphemize'
gl	GLOBU	*globo*	*globo*	'ball'
	GLŪTE		*grude*	'glue'

Some of these words are considered learned (see Williams 1938: 62-63). However, in most cases it is hard to tell whether the words entered late or were restored to resemble the Latin forms[15].

Obstruent + /r/ sequences undergo no changes, surviving intact to this day

(55) Word-initial obstruent + /r/ sequences:

pr	PRATU	*prado*	*prado*	'meadow'
tr	TREDECI	*treze*	*treze*	'thirteen'
kr	CRĒATU	*criado*	*criado*	'servant'
br	BRACCHIU	*braço*	*braço*	'arm'
dr	DRACŌNE	*dragón*	*dragão*	'dragon'
gr	GRAECU	*griego*	*grego*	'Greek'
fr	FRAXINU	*fresno*	*freixo*	'ash tree'

[15] In the case of *lastimar/blasfemar,* it is easy to see the popular origin of the first and the learned origin of the second.

Table 28 presents all occurring CC sequences. Natural classes are enclosed in boxes. Parentheses indicate very infrequent sequences such as /bl/ or /dr/, which were normally introduced by learned channels. The only permitted initial sequences are (nonsibilant) obstruent + liquid. The exlcusion of siblilants here has its parallels in Latin, which did not permit */sl/.

Table 28 **Word-Initial C_1C_2 Sequences**

	p	t	k	b	d	g	f	ts	tʃ	dz	dʒ	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	r
p																				pl		pr
t																						tr
k																				kl		kr
b																				(bl)		br
d																						(dr)
g																				(gl)		gr
f																				fl		fr
ts																						
tʃ																						
dz																						
dʒ																						
s																						
ʃ																						
v																						
z																						
ʒ																						
m																						
n																						
ɳ																						
l																						
ʎ																						
r																						
	p	t	k	b	d	g	f	ts	tʃ	dz	dʒ	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	r

2.3.2. **Word-final consonants**

Before our treatment of word-final phonotactics, it is crucial to examine the effect of apocope in Late Latin and early Spanish.

2.3.2.1. **Apocope in Old Spanish**

One striking difference between modern and medieval Spanish is the lesser restriction on the types of consonant codas permitted word-finally in Old Spanish. Most of these differences arise from apocope, the loss of word-final /e/, and in some cases /o/, reaching maximum heights between the 11th and 12th centuries, the so-called *apocope extrema* (Lapesa, 1951, 1975).

As we soon see in our discussion of diachrony, Late Latin and early Romance had already lost many of the word-final sequences tolerated in Classical Latin. In the same way that syncope created many new consonant sequences word-medially, however, apocope came to increase this small inherited set of word-final consonants inherited from Late Latin. By Pre-Spanish, the following consonant phonemes could occur in word-final position.

Table 29 **Word-Final Consonants (pre-Spanish)**

d
(ts)
dz
s
z
n
l, r

	p	t	k	b	d	g	ts	tʃ	dz	dʒ	f	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	ɾ
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓		✓		✓	✓	✓
WF					✓		✓		✓			✓			✓			✓		✓		✓
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 30 provides a sampling of wellformed word-final consonants early on in Spanish.

Table 30 **Examples of Pre-Spanish Word-Final Consonant Phonemes**

a. Obstruents

Coronals

d	*ret/red* 'net', *verdat/verdad* 'truth' (cf. PL *redes*, *verdades*)
ts	*coç/coz* 'kick' (cf. PL *co*[tz]*es*)
dz	*paz* 'peace' (cf. PL *pa*[dz]*es*)
s	*aprés* 'after', *comes* 'you eat', *aqués* 'that', *mies*[16] 'grain harvest' (cf. PL *me*[s]*es, mie[s]es*)
z	*mes* 'month' (cf. PL *me*[z]*es*)

b. Sonorants

Coronal

n	*pan* 'bread'
l	*sal* 'salt'
r	*mar* 'sea'

It is clear that only coronal place occurred word-finally. Of the coronal obstruents, only the [+anterior] coronals (i.e. "dentals") and not the "palatals" specified as [-anterior] could occur in word-final position. Therefore, cases such as **noch* [notʃ] 'night', although later attested, are unattested during this period. Furthermore, the phoneme /t/ never occurred word-finally. Although early spellings such as *verdat* suggest low-level word-final devoicing, these are always cases of underlying /d/, as the plural *verdades* shows. Furthermore, as we will soon see, early apocope was blocked after /t/ and /ts/, i.e. *siete*, *coce,* not **siet*, **coç/coz*. It is admittedly odd that unmarked /t/ should not be favored over /d/ word-finally, and the only explanation for this fact is that all word-

[16] It appears that this noun was reanalyzed as /miez/ by some speakers, as demonstrated by the RAE corpus, with 100 cases of *mieses* with /z/ next to 281 of *miesses* with /s/.

medial /t/ either stem historically from older consonant sequences (e.g. SEPTE) or are learned borrowings (e.g. *dote* ‘dowry’). As we see in § 3.3.2.1, apocope did not originally occur after a consonant cluster, e.g. SEPTE > *siete/sete* ‘seven’. As for /ts/, textual evidence tells us that /ts/ probably appeared word-finally only variably during this period. By early Old Spanish the word *coç* almost always appears without the final vowel, which it is worth taking note, never was restored in the later reversal of *apocope extrema* (cf. NS *coz,* see below). Words with /dz/ from syncope, however, most likely never appeared apocopated during this period, and only occasionally during early Old Spanish, inherited in full form by NS, e.g. *doce*.

(56) Non-occurrence of apocope with new (secondary) coronals

t	*siete* ‘seven’ (< SEPTE)
ts	*coçe* ‘twelve’ (< CALCE)
dz	*dodze* ‘twelve’ (< DUODECE)

This stage in which only coronals were permitted in syllable coda was for the most part identical to that of modern Spanish. We examine whether this condition also holds word-medially below. A later wave of apocope (*apocope extrema*) extended this inventory to labials and dorsals.

Table 31 **Word-Final Consonants (Early Old Spanish):**

p	**t**		**k**
b	**d**		**(g)**
	ts	**tʃ**	
	dz	**dʒ**	
f	**s**	**ʃ**	
v	**z**	**ʒ**	
m	**n**	**ɳ**	
	r, l	**ʎ**	

	p	t	k	b	d	g	f	tst	tʃ	dz	dʒ	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	r

WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓		✓		✓	✓	✓
WF	✓	✓	✓	✓	✓		✓	✓		✓		✓		✓	✓		✓	✓	✓	✓	✓	✓
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 32 below presents some examples of wellformed word-final consonants.

Table 32 **Examples of Word-Final Consonants (Early Old Spanish)**

Obstruents

Labial

p *Josep*, *Lop* (proper nouns), *príncep* 'prince' (cf. PL *príncepes*)

b *axeb/axep* 'light', *Lob/Lop* (name), *quiçab* 'perhaps', *xenab* 'mustard' (~ *xenabe*)

f *Calef, Yucef* (proper nouns)

v *escriv* 'write', *nub/nuf* 'cloud' (cf. PL *nu*[v]*es*)

Coronal [+anterior]

t *açot* 'whip', *alcahuet* 'pimp', *sacerdot* 'priest' (cf. PL *açotes, alcahuetes, sacerdotes*)

d *ret/red* 'net', *verdat/verdad* 'truth' (cf. PL *redes*, *verdades*)

s *aprés* 'after', *comes* 'you eat', *aqués* 'that', *mies* 'grain harvest'(cf. PL *e*[s]*es, mie*[s]*es*)

z *mes* 'month' (cf. PL *me*[z]*es*)

ts *coç*/*coz* 'kick' (cf. PL *co*[tz]*es*)

dz *paz* 'peace' (cf. PL *pa*[dz]*es*)

Coronal [-anterior]

ʃ *dix* 'I said', *ex* 'axis', *gambax* 'cushion worn under armor' (cf. PL e[ʃ]*es, gamba*[ʃ]*es*)

ʒ	*barnax*[17] 'deed', *linax* 'lineage' (cf. PL *lina*[ʒ]*es*)
tʃ	*lech* 'milk', *much* 'very', *noch* 'night'
dʒ	*ensay* 'conquest, type of fabric', *Pelay* 'Pelayo' (~ *ensa*[dʒ]*e, Pela*[dʒ]*o*)
Dorsal	
k	*alcornoc* 'cork tree', *duc* 'duke' (cf. PL *alcorno[k]es, du[k]es*)
g[18]	*Diag/Diac(h)* 'Diego' (~ *Diago*), *Montfrag* (place)
Sonorants	
Labial	
m	*alfajem* 'barber', *alum* 'light', *que-m* 'that me'
Coronal [+anterior]	
n	*pan* 'bread'
l	*sal* 'salt'
r	*mar* 'sea'
Coronal [-anterior]	
ɳ	*lue(n)n* 'far'
ʎ	*ca(l)l* 'street', *mi(l)l* 'one thousand', *va(l)l* 'valley' (cf. PL *ca*[ʎ]*es, mi*[ʎ]*es,va*[ʎ]*es*)

As Table 32 illustrates, apocope came to occur after sonorants and obstruents of all places, i.e. labial, coronal, palatal, and dorsal. However, the palatal sonorants /ɳ ʎ/ tended to depalatalize word-finally, cf. *ca[l] ~ ca[ʎ]es* 'street ~ streets', *é[l] ~ e[ʎ]os* 'he ~ they'.

As is discussed in more depth in § 3.3.2.1, historical evidence tells us that apocope was extended to coronals stemming from older sequences (Lloyd 1987).

---

[17] Via OF *barnage/bernage* < *BARONATICU (Menéndez-Pidal, 1977: 498).

[18] Other examples include *çonog* 'cymbals' (2 instances) prior to the 14th century; *azogue* 'mercury' (1 occurrence) is so rare that it is not possible to establish whether this form apocopated.

(57) Occurrence of apocope with new (secondary) coronals

t	*siet* ‘seven’ (< SEPTE)
dz	*doz* ‘twelve’ (< older *dodze* < DODICE)

Still, there are other coronals also from older sequences which apparently failed to apocopate. This interaction of syncope, apocope, and consonant sequence simplification, really quite complex, is examined in Chapters 4-6.

(58) Nonoccurrence of apocope with new (secondary) anterior coronals

wdz	*sauze* ‘willow’ (< older *salze* < SALICE)[19]
jn	*peine* ‘comb’ (< PECTINE)

As mentioned above, this extension and heyday of apocope differs radically from modern Spanish. Descriptively, it is accurate to say that Old Spanish of this period permitted all of these consonant phonemes word-finally. However, the fact that this ongoing sound change never reached completion, and was partially reversed, suggests that *apocope extrema* was variable and/or perhaps phonetic, rather than phonological.[20]

2.3.2.2. **Word-final C_1C_2 sequences**

Before the advent of *apocope extrema* (i.e. pre-Spanish) there were no final CC sequences in Old Spanish. Recall that /st/, /nt/ and marginally /lt/ and /rt/ (e.g. *vult, fert*), occurred in Latin.

[19] The form *calz* ‘river bank’ (< CALICE) is, however, attested in the RAE corpus.
[20] Nevertheless, forms such as *guante, molde* etc. may stem from incorrect restoration, i.e. ***guanto,* ***moldo* (Carol Rosen, personal communication).

Table 33 Word-Final C_1C_2 Sequences (Early Old Spanish)

	p	t	k	b	d	g	f	v	ts	tʃ	dz	dʒ	s	ʃ	z	ʒ	m	n	ɳ	l	ʎ
p													(ps)								
t																					
k																					
b											(bdz)		(bs)								
d											(ddz)										
g																					
f																					
v																					
ts																					
tʃ																					
dz																					
dʒ																					
s		st																			
ʃ																					
z																					
ʒ																					
m																					
n		nt	nk		nd				nts		ndz		ns								
ɳ																					
l		lt	lk		ld				lts		ldz										
ʎ																					
r		rt	rk		rd	(rg)			rts		rdz										
	p	t	k	b	d	g	f	v	ts	tʃ	dz	dʒ	s	ʃ	z	ʒ	m	n	ɳ	l	ʎ

Thus word-final sequences fall into three major classes:

(59) Wellformed word-final CC classes

sibilant + stop (/s/ + voiceless stop)

sonorant + nonapproximant

stop + sibilant

More fine-grained generalizations are given in parentheses. For example, although sequences like /st/ are examples of sibilant + stop, it is probably more accurate to refer to /s/ + voiceless stop, since sequences like /tsb/ and /ʃt/ are not found in Old Spanish.

In early Old Spanish, apocope was optional after a consonant sequence, and a wide range of final CC clusters were attested. Table 34 below presents some of these apocopated CC sequences.

Table 34 **Examples of Word-Final C_1C_2 Sequences In Early Old Spanish**

Obstruents

C_2 = Labial[21]

sp	
mp	*Camp d'Espina* (place)
lp	(*colp* 'blow')
rp	

C_2 = Coronal [+anterior]

[21] Instances here are mainly dialectal: *Asp* (place name) appears twice in *Capitulación de Elche* (1296); *colp* 'blow' occurs 45 times in Aragonese Fernández de Heredia (1376/77-). The phrase *colp'en el ecsudo* occurs with liaison twice in *Libro Alexandre*. Place names like *Rialp* also occur in Catalan/Aragonese texts (14th century). The name *Don Salamon Avencresp, judío de Jacca* appears 3 times in an anonomous Jewish document (1310-1313). *Algarb* (1) in *Codicilo del testamento de Alfonso X* [Diplomatario andaluz de Alfonso X] (1284), (2) in *Repartimiento de Murcia* (1257-1271), (1) in Heredia'a *Gran crónica de España*, III (1376-1391); *Sogorb* (place name) four times in a document entitled *Jaime I de Aragón retira la iglesia de Segorbe de la jurisdicción del obispo de Valencia* (1258) next to *Sogorue* (1) in Alfonso X's *Estoria de España, II* (1270-1284); *alcalb* (name of mansion) and *Atharf* both three times in Alfonso X's *Picatrix* (1256). *Almatanb* (proper noun) once in anonymous *Crónica de 1344*. *Agilulf, Aginulf, Gissolf* (proper nouns), in Heredia's *Traducción de Breviarium ab urbe condita, de Eutropio* (1377-1399), *Yuçelf* (proper noun) in *Crónica de 1344*. Examples such as *Camp d'Espina* (< CAMPU 'field') are rare, occurring once in Alfonso X.

st	*aquest* 'this', *fust* 'rod', *trist* 'sad'
nt	*fuent* 'fountain', *puent* 'bridge', *mont* 'mountain'
lt	*Arnalt, Bernalt, Tibalt* (names)
rt	*fuert* 'strong', *part* 'part', *suert* 'luck'
nd	*cuend* 'count', *end* 'thence', *ond* 'whence'
ld	*alca(l)ld* 'mayor', *Arnald, Bernald, Tibald*
rd	*verd* 'green' (TDMS)
ps/bs	*Habs* '?' (RAE), *orebs*[22] 'goldsmith' (~ *orebses*)
ns	*çens* 'census (tax)'
ls[23]	*capitols* 'councils', *quels* 'that to them'
rs[24]	*Mars* (name), *Tors* (place)
nts	*estonç/estonz* 'then', *romanz* 'vulgar tongue'
lts	*dulç/dulz* 'sweet'(~ *dulce*), *Çumelç* (place)
rts	*Çerz, Lerz* (names)
bdz	*Hobz* (name), *orebz* 'goldsmith' (~*orebze*)
ddz	*doz* 'twelve' (~ *do(d)ze*)
ndz	*quinz* 'fifteen' (~ *quinze*)
ldz[25]	*calz* 'river bed'(~ *calze*)
rdz[26]	*alterz* 'triple (in dice)', *sorç*? 'mouse'

C_2 = Coronal [-anterior]

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[22] This form is very rare.
[23] Both appear in heavily Aragonized texts.
[24] Both appear in *Libro Alexandre* (1240-1250).
[25] The word *calz(e)* 'river bed' (< CALICE) appears apocopated only twice before the 14th century, and *coç/coz* 'kick' (< CALCE) is the normal Castilian outcome, yet *coze* does appear early on (TDMS). Forms preserving the /l/ are dialectal.
[26] The only cases of *alterz* occur apocopated with <z>, so it is only possible to guess that this may be /z/. The word is thought to be related to *tres* 'three', i.e. three roles of 5 or 6 (TDMS). The final consonant may be adverbial as in *estonç/estonz*, but this is speculative. To my knowledge, the word *sorç* is extremely rare, and attested only in the Aragonese Fernández de Heredia.

ntʃ	*Sanch*[27] (name)
ltʃ	
rtʃ[28]	

C$_2$ = Dorsal

sk	*Damasc* (place)
nk[29]	*estanc* 'pond', *franc* 'generous'
lk	*Folc* (name)
rk	
rg	*Barg, Alfarg* (place names)

Sonorants[30]

mn	*omn* 'man'
nm	
lm	*Guillelm, Riquelm* (names)
ln	
rm	*firm* 'firm'
rn	*carn* 'meat'

[27] This form is found in Castilian territory, and in Alfonso X himself.
[28] *Capcapch, Elch*, and *Exearch* appear quite late in Aragonized texts.
[29] I have been unable to find more information on *adonc* 'whence?', *estonc/entonc* (for *estonç/entonç* 'then'?), *delienc* 'wire?', all found in the RAE corpus. Most of these words, as well as ones such as *palenc* 'fence', *renc* 'rank', are found in Navarre legal documents, and it is not clear to me whether to include them here or not. Nevertheless *Folc* (one instance) and *franc* appear in Alfonso X. Cases of /Nk/ outnumber /Lk/ by 29 to 2.
[30] The forms *carn* and *omn* appear once in *Vida de Santa María Egipcíaca* (c. 1215); in poetry, loss was favored before a like vowel, e.g. *firm'emperador*.

The infrequency of certain sequences often makes it difficult to tell what the surface realization of these clusters was., e.g. *orebz/orebs* 'goldsmith', *Habs*, etc. The attested spelling *dodze* 'twelve' is hard to interpret. Although it is unlikely that this represented a geminate /ddz/ (<z> alone represented /dz/), forms like *orebze* with medial /bdz/ suggest that sequences containing /dz/ were indeed possible. However, it is likely that these sequences were weakened in word-final position, as spellings like *orebs* (probably [oreps]) suggest.

Despite many of the descriptions of *apocope extrema* as an "anything goes" situation, some sequences are clearly more frequently attested than others. The following patterns emerge from the data presented above. First, apocope appears more favored when C_2 is the coronal stop /t/ (e.g. *aquest, puent*, etc.). This is reflected in the higher frequency of such tokens in the RAE corpus, as well as the lesser co-occurrence restrictions on C_1. To see this, compare the following tokens with labial to those with coronal.

Table 35 **Apocope Extrema**

Token	**(Cp#)**		**(Cpe#)**		**Total**
Asp(e)	2	50.0%	2	50.0%	4
romp(e)	0	0.0%	12	100.0%	12
colp(e)	2	0.7%	268	99.3%	270
sierp(e)	0	0.0%	33	100.0%	33
torp(e)	0	0.0%	93	100.0%	93

Token	**(Ct#)**		**(Cte#)**		**Total**
a abt(e)	0	0.0%	22	100.0%	22
aquest(e)	209	61.5%	131	38.5%	340
mont(e)	175	41.3%	249	58.7%	424
Rinalt(e)	148	54.8%	122	45.2%	270
fuert(e)	494	28.3%	1249	71.7%	1743

Token	**(Ck#)**		**(Cke#)**		**Total**
Damasc(o)	5	8.5%	54	91.5%	59

estanqu(e)	2	11.8%	15	88.2%	17
franqu(e)	27	18.6%	118	81.4%	145
Çuuielqu(e)	0	0.0%	32	100.0%	32
alquerqu(e)	0	0.0%	24	100.0%	24

Both apocopated variants (CC#) and unapocopated variants (CCe#) of a given form were examined. Token frequency of each form is given first, followed by the percentage of apocopated or unapocopated form. For instance, *aqueste* occurs 340 times in the RAE corpus through the 13th century, as *aquest* 209 times (61.5%), and as *aqueste* 131 times (38.5%).

Frequency falls off significantly when C_2 is a non-coronal stop such as /p/, and here the vast majority of forms are proper nouns. For instance, in the case of /lp#/, where there are two occurrences of *colp* 'blow', none of the other sonorants are found to co-occur with the labial. That is, words such as *sierpe* 'snake' and *torpe* 'lazy' never appear as **torp* and **sierp*[31] in Castilian texts.

Forms containing a velar C_2 are infrequent, most being either French/Frankish borrowings (e.g. *franc*) or place names. In the former case, it is often not possible to tell whether we are dealing with apocope or epenthesis. Although we know the origin of *franc* (Frankish *frank* or OF *franc*), for instance, it is not clear whether this word entered Spanish with apocope or rather as *franque/franco*, later participating in the synchronic apocope process. From the synchronic perspective, clearly this is irrelevant, but it is still uncertain how to treat all of the presumably alternating forms *franc, franco, franque*.

Although the above generalizations hold across different sequences, examination of forms containing the same sequence suggests a somewhat more complicated situation.

[31] I found five instances of *sierpe*, all of which appear in Aragonese/Catalan-speaking regions.

For instance, in the RAE corpus, the tokens *aquest(e)* ‘this’, *fust(e)* ‘rod’, *tost(e)* ‘soon’, *trist(e)* ‘sad’ have the following token frequencies.

Table 36 **Apocope After /st/**

Token	To 1299		1300-1400		
	(st#)	(ste#)	(st#)	(ste#)	
aquest(e)	209	131	328	587	1255
fust(e)	38	64	51	23	176
tost(e)	3	1	166	59	229
trist(e)	4	107	1	224	331
	254	303	546	893	
	557		1439		1996

In Table 36, cases of /st/ outnumber /ste/ in the demonstrative *aquest* before the 14th century. In *fuste* and *triste*, however, /ste/ is clearly preferred to /st/. After 1300, 125 of the 166 instances of *tost* and 20 of the 51 cases of *fust* occur in the works of the Aragonese Fernández de Heredia (1310?-1396). This demonstrates that dialect has a dramatic effect on apocope. For instance, Table 37 presents frequencies for /nt(e)/.

Table 37 **The Effect of Dialect on *Apocope Extrema* (1300-1400)**

Token	(nt#)		(nte#)
	Castilian regions	Aragonese regions	
fuent(e)	35	45	130
mont(e)	150	249	345

45 of the 80 cases of *fuent* (next to 3 of 130 of *fuente*), and 249 of the 399 cases of *mont* (next to 43 of 345 *monte*) occur in Aragonese-speaking regions. Thus *apocope extrema* is clearly favored in eastern territories like Aragon.

Furthermore, it appears that word final labial stop + /s/ sequences are most frequent in Aragonese authors. For example, the form *arabs* 'Arabs' is found four times in the RAE corpus, and *princeps/prinçeps* 'princes' five times, both in the Aragonese Fernández de Heredia (1377-1399). In Castilian, apocope never occurs like this in closed syllables (i.e. PRINCIPES > **princeps*).

Gallo-Romance names are also especially interesting. Before the 13th century, the following forms are found: *Arnalt* (206) ~ *Arnalte* (2), *Bernaldo* (355) ~ *Bernald* (13) ~ *Bernalte* (8) ~ *Bernal* (193), *Rinalt* (84) ~ *Rinalte* (1), *T(h)ibalt* (57) ~ *T(h)ibalte* (0).

Comparing these proper names with other cases of /lt(e)/ is interesting. The form *esmalte* (< Gothic) appears as *(e)smalte* twelve times up to 1492 AD, and *girifalte/gerifalte* 'large falcon' (< Norwegian *geirfalki*) appears with /lte/ 37 times from the 14th to 15th centuries, and not once ends in /lt/. This suggests that French names tended to occur more frequently in their apocopated form.

As illustrated in Table 34 above, stop-stop sequences were very rare in word-final position, and limited to /pt/ or /bt/ (*Alcabt*). Stop-affricate and stop-fricative occur (e.g. *princeps/prinçeps* 'princes'). Nasal-stop sequences were likely homorganic, despite orthography sometimes (e.g. *Almatanb*). In many of these examples, it also seems that we are seeing the effect of dialect.

The restrictions discussed above on word-final consonants also hold for sequences. For instance, the prohibition of word-final /ʒ/ also pertains for *monge* 'monk (*mong/monj*). Recall that /g/ is not found alone word-finally. Although /rg/ does occur in several place names (e.g. *Barg, Alfarg*), the failure of apocope to apply in words such as *albergue* 'inn' (< Gothic *haribairgo*), never **alberg/alberc* (cf. OC/OO *alber*[k]), suggests that /rg/ was probably not an acceptable word-final Castilian sequence.

2.3.2.3. **Word-final $C_1C_2C_3$ sequences**

Apocope failed to apply after obstruent + liquid sequences, e.g. *padre* > ***padr* 'father' because of sonority sequencing restrictions on the output sequence (§ 3.3.2.1). Sonority also blocked apocope after consonant + obstruent + liquid sequences, e.g. *silvestre* > ***silvestr* 'wild'.

Having examined word-initial and word-final phonotactics, we now turn to word-medial sequences.

2.3.3. **Word-medial consonant sequences**

As apocope led to many new sequences in word-final contexts, syncope (the deletion of word-medial non-low vowels) led to many new word-medial sequences. The effects of syncope are discussed in depth in Chapters 4 and 5. This section examines the possible sequences of Old Spanish.

The following table presents all attested CC sequences. Natural classes are enclosed by bold lines. Only non-boundary sequences (i.e. not occurring at a morpheme boundary) were taken into account for the groupings. Boundary sequences are, however, given in bold. Asterisks (*) indicate earlier sequences, e.g. /ll/, /dn/, which were early on altered (i.e. to /ʎ/, /nd/, etc).

Table 38 **Word-Medial C_1C_2 Sequences**

	p	t	k	b	d	g	f	v	ts	tʃ	dz	dʒ	s	ʃ	z	ʒ	m	n	ɳ	l	ʎ	r
p		pt											ps							pl		pr
t																						tr
k		kt											ks							kl		kr
b					bd						bdz	bdʒ								bl		br
d						dg		**dv**			ddz	**ddʒ**					*dm	*dn		*dl		dr
g																	**(gm)**	**(gn)**		ɡl		gr
f																				fl		fr
v																						
ts	tsp	tst	tsk				tsf						tss									
tʃ																						
dz				dzb	dzd	dzg											dzm	dzn		dzl		dzr
dʒ																						
s	sp	st	st	**sb**	sd	sg						**sdʒ**					sm	sn		sl		sr
ʃ																						
z																						
ʒ																						
m	mp			mb													*mm					
n		nt	nk		nd	ng	nf		nts	nʃ	ndz		ns			**nʒ**		*nn				nr
ɳ																						
l	lp	lt	lk		ld	lg	lf	lv	lts	ltʃ	ldz		ls			**lʒ**	lm	ln		*ll		lr
ʎ																						
r	rp	rt	rk		rd	rg	rf	rv	rts	rtʃ	rdz	**rdʒ**	rs			**rʒ**	rm	rn		rl		rr
	p	**t**	**k**	**b**	**d**	**g**	**f**	**v**	**ts**	**tʃ**	**dz**	**dʒ**	**s**	**ʃ**	**z**	**ʒ**	**m**	**n**	**ɳ**	**l**	**ʎ**	**r**

In light of the compatibility of almost all consonants in a CC sequence, it is possible only to make the following two basic major class divisions.

(60) Wellformed word-medial CC classes

consonant + consonant

nonsibilant obstruent + liquid

One reason for the defining of a nonsibilant obstruent + liquid set finds support from the tautosyllabic syllabification of these sequences. In Table 38, some examples of word-medial CC sequences are given, grouped on the basis of their syllabification. Morpheme/word boundaries are given, but indicated by /#/. Some of these sequences continue original Latin CC sequences with few if any modifications, especially in the case of obstruent + liquid sequences or sequences beginning with a sonorant, e.g. CERTU > *cierto* 'certain', PERNA > *pierna* 'leg', etc. Others are the result of syncope (e.g. CUBITU > *cobdo* 'elbow, COMITE > *conde* 'count', etc.), as is seen in Chapters 4 and 5.

2.3.4. **Word-medial sonority and syllabification**

Table 39 gives some examples of word-medial CC sequences in Old Spanish. Based on what we know about syllabification in Classical Latin and modern Spanish, it is possible to reconstruct the syllabification of each sequence (heterosyllabic or tautosyllabic). Within each natural class, gaps are reflected by the absence of listed forms. Sequences are grouped by their syllabification and their natural class.

Table 39 **Examples of Word-Medial CC Sequences**

Heterosyllabic sequences

Consonant + consonant

pt	*captener* 'sustain', *captivo* 'captive'
pts	
ps	*capsa* 'box'
bd	*cobdo* 'elbow', *cibdat* 'city', *subdito* 'subject'
bdz	*orebze* 'goldsmith'
bdʒ	*sub#iudgar* 'compromise onself' (late)
bs	*ob#sesso* 'blocked'
bʃ	
bz	
bʒ	*sub#geto* 'subject'
bm	*Abmenadab*, *Abmedelic* (Arabic names), *sub#mersión* 'submersion' (late)
bn[32]	*Abnabar* (Arabic name), *Orebnes* (place name)?
tp	*ad#presura* 'uncultivated land' (glosses)
tk	*a(d)#quirir* 'acquire'
tts	
db	*Jedban* (foreign name)
dv	*ad#verso* 'opposed, *na(d)vidat* 'Christmas'
ddz	*do(d)ze* 'twelve'
ddʒ	*ad#iudar* 'help'
dg	*judgar* 'judge', *-adgo* (suffix)
dm	*bidma* 'cover', *sedmana* 'week'
dn	*cadnado* 'padlock'

[32] Probably [mn], as spellings like *dabnificados* for *damnificados* (Zaragoza, 15th c.) suggest.

dl	
tsp	*Guizpuizcua* (place), *so(t)zprior* 'under-prior'
tst	*açtor/aztor* 'hawk'
tsk	*Guizpuizcua* (place), *vizco* 'cross-eyed'
tsf	*Alaazfor*, *Avenaçfora* (names)
tss	*Albarazsin* (place), *faz#se* 'one makes'
tsl	*sotzlevar* 'raise up'?
tsr	*creç(e)ra* 'will grow', *pareç(e)ra* 'will seem'
kt	*do(c)tor* 'doctor' , *efe(c)to* 'effect' (late)
ks, gz	*examinar/esaminar* 'investigate', *exaltar* 'raise' (late)
km	*Jacme*[33] (name)
dzb	*Guzberte* (foreign name)
dzd	*plazdo* 'period'
dzg	*-azgo* (suffix), *juzgar* 'judge'
dzm	*diezmo* 'tithe', *Guzmán* (proper name)
dzn	*durazno* 'peach', *lezne* 'smooth'
dzl	*Cazlona* (place), *fazlo* 'do it!'
dzr	*sizra* 'cider', *yaz(e)ra* 'will lie (in rest)'
gm	*au(g)mentar* 'increase' (late)
gn	*significar* 'mean' (late)
sp	*abispa* 'wasp', *obispo* 'bishop'
st	*fiesta* 'day of rest', *puesto* 'put'
sk	*pescar* 'fish', *rascar* 'scratch'
sb	*des#bolver* 'unwrap' *des#vergonçado* 'shameless',
sd	*desde* 'from', *desdé(y)n* 'disdain'

[33] This Aragonese king's name appears only a handful of times in historical treatises, e.g. *Repartimento de Murcia* (later 13th century).

sg	*pesgar* 'burden', *rasgar* 'rip'
sf	*des#fear* 'disfigure', *satis#fazer* 'satisfy'
sts	*disciplina* 'discipline', *seis#çientos* 'sixhundred'
stʃ	
sdz	
sdʒ	*des#iarretar* 'cut at the leg', *des#juntar* 'unyoke'
sm	*mesmo* 'same', *se(y)smo* 'sixth', *quaresma* 'fortieth'
sn	*asno* 'mule', *mesnada* 'group of vassals'
sl	*des#leal* 'disloyal', *fuslera* 'type of brass'
sr	*des#r(r)eptado* 'exonerated', *Isr(r)ael*
mp	*campo* 'field', *tiempo* 'weather'
mb	*am(b)os* 'both', *tumba* 'tomb', *envés* 'reverse'
nt	*contar* 'tell'
nk	*aunque* 'although', *junco* (plant)
nd	*andar* 'walk', *candado* 'padlock', *conde* 'count'
ng	*angosto* 'narrow', *fongo* 'mushroom'
nts	*esperança/esperanza* (rare) 'hope', *vergüença/vergüenza* (rare) 'shame'
ntʃ	*ancho* 'wide', *henchir 'fill'*
ndz	*renzilla* 'fight'
ndʒ	
nf	*enfermo* 'sick', *i(n)fante* 'prince'
ns	*ánsar* 'wild goose', *cansado/cançado* 'tired'
nʃ	*en(#)xiemplo* 'example'
nʒ	*ángel* 'angel', *monge* 'monk'
nm	*con*(+)*migo* 'year'
nn	*anno* 'year' (became palatal)

nl	
nr	*en#redar* 'tie up', *Enrrique* (name)
lp	*pulpo* 'octopus', *golpe* 'blow'
lt	*alto* 'high', *suelto* 'loose'
lk	*alquiler* 'rent', *calcañar* 'heel'
lb	*alba/alva* 'dawn', *olbidar/olvidar* 'forget'
ld	*caldo* 'warm', *sueldo* 'coin'
lg	*algo* 'something', *pulga* 'flea'
lts	*alçar* 'raise'*, calçado* 'shoe(d)', *calçe* (rare) 'river bed'
ltʃ	*Alchabit, Elche* (proper names)
ldz	*calzado* (rare), *calze* 'river bed'
ldʒ	
lf	*alfiler* 'pin', *cavalfuste* 'saddle stand'*, solfear* 'sing'
ls	*falso* 'false', *pulso* 'backfire'
lv	
lz	
lʒ	*Algerziras* (place), *indulgencia* 'indulgence'
lm	*alma* 'soul', *colmiello* 'canine tooth'
ln	*mulnera* 'miller, dam'
ll	*caballo* 'horse' (became palatal)
lr	*colrar* 'color, redden'*, val(d)rá* 'will be worth'
rp	*cuerpo* 'body'
rt	*furtar* 'rob', *puerta* 'door'
rk	*puerco* 'pig', *surco* 'furrow'
rb	*cuerbo/cuervo* 'crow', *sierbo/siervo* 'servant'
rd	*pardo* 'black'
rg	*cargar* 'load'

rts	*cárçel* ‘prison’, *fuerça* ‘force’
rtʃ	*marchito* ‘wilted’, *percha* ‘stand’ (borrowed)
rdz	*arzilla* ‘mud’
rdʒ	*per#iurio* ‘perjury’
rf	*fórfola* ‘dandruf’, *marfaga* ‘raw material’
rs	*persona* ‘person’
rʃ	
rz	
rʒ	*cirurgiano* ‘surgeon’
rm	*ermida* ‘hermitage’
rn	*pierna* ‘leg’
rl	*burla* ‘joke’, *mierla* ‘blackbird’, *orlar* ‘border’
rr	*carro* ‘cart’, *fer(i)rá* ‘will strike’, *terrá* ‘will have’

Tautosyllabic sequences

pl	*soplar* ‘blow’
tl	
kl	*declinar* ‘decline, fall’
bl	*pueblo* ‘town’
dl	
fl	*afluente* ‘affluent’ (rare)
gl	*regla* ‘rule’, *sieglo* ‘century’
pr	*oprimir* ‘depress’
tr	*quatro* ‘four’
kr	*secreto* ‘secret’
br	*abrir* ‘open’

dr	*ladrar* ‘bark’
gr	*milagro* ‘miracle’, *sagrado* ‘holy’
fr	*sofrir* ‘suffer’

Stop + sibilant sequences like /ps/ had popularly reduced to /s/ (e.g. IPSE > *esse* ‘that’), and learned words like *capsa* ‘box’ were quite rare, as were cases of [g.n], which also tended to reduce in Old Spanish, e.g. *si(g)nificar* ‘mean’. Other gaps are either accidental or structural in nature, e.g. /pts/, /bf/, /bz/, /tl/, /tʃl/, /tʃr/, /dʒl/, /dʒr/, /stʃ/, /sdz/, /ndʒ/, /nm/, /nl/, /lv/, /ldʒ/, /lz/, /rʃ/, /rz/, etc.

In Chapter 1 (§ 1.5.1), the concept of aperture and sonority was discussed. Based on the data above, a sonority scale can be posited for Old Spanish.

(61) Sonority (Old Spanish)

Obstruents		Sonorants			
Nonsibilants	Sibilants	Nasals	Laterals	Rhotics	Glides/Vowels
0	1	2	3	4	5

SONORITY

The major division in this scale is between obstruents and sonorants. Within obstruents, there is a further division based on sibilance. This division takes into account the fact that nonsibilant obstruent + approximant (or liquid) sequences syllabify differently from sibilant obstruent + approximant (or liquid) sequences, cf. [.pl] (*soplar* ‘blow’) and [s.l] (*fuslera* ‘rifle’). Within the sonorants, we find the typical nasal, lateral, rhotic, glide, vowel classification. Evidence for the separation within the liquids of lateral versus rhotic comes from the phonetic realization of /r/ as a trill in words like *Israel* ‘Israel’. As is seen below, this is the result of the different sonority of /r/ and /l/, cf. *fuslera* ‘rifle’ ([s.l]).

As was done for Latin, the word-medial sequences above in Table 39 can also be classified on the basis of their sonority and syllabification. Except for stop + liquid sequences, all word-medial CC sequences are heterosyllabic[34]. This is almost identical to the Classical Latin state of affairs. Table 40 presents a classification of all word-medial CC sequences by sonority.

Table 40 **Sonority and Syllabification of CC Sequences**

Flat sonority

stop + stop	[p.t]	*captener*	'sustain'
sibilant + sibilant	[ts.s]	*faz-se*	'one makes'
nasal + nasal	[n.m]	*conmigo*	'with me'

Falling sonority

sibilant + stop	[s.t]	*fiesta*	'day of rest'
nasal + stop	[n.t]	*contar*	'tell'
lateral + stop	[l.t]	*alto*	'high'
rhotic + stop	[r.t]	*puerta*	'door'
sibilant + fricative	[s.f]	*desfear*	'disfigure'
nasal + fricative	[n.s]	*ánsar*	'wild goose'
lateral + strident	[l.s]	*falso*	'false'
rhotic + strident	[r.s]	*persona*	'person'
rhotic + nasal	[r.n]	*pierna*	'leg'
lateral + nasal	[l.n]	*mulnera*	'miller, dam'
rhotic + lateral	[r.l]	*burla*	'joke'

Rising sonority

stop + sibilant	[p.s]	*capsa*	'box'
stop + nasal	[g.n]	*significar*	'mean' (late)
stop + lateral	[.pl]	*soplar*	'blow'
stop + rhotic	[.tr]	*quatro*	'four'
sibilant + nasal	[s.n]	*asno*	'ass'
sibilant + lateral	[s.l]	*fuslera*	'rifle'

[34] Coronal stop + lateral metathesized early on, e.g. *cabidlo* > *cabildo* 'chapter'.

sibilant + rhotic	[s.r]	*Israel*	'Israel'
nasal + lateral	?		
nasal + rhotic	[n.r]	*enredar*	'snare'
lateral + rhotic	[l.r]	*colrar*	'color, redden'

All sonority contours (flat, falling, and rising) are found in Old Spanish. By virtue of the principle of syllable contact, the more sonorous a coda, the more preferred it was (§ 0.2.1). Stop + liquid sequences are not subject to this restriction because they are syllabified in the same syllable. The remaining heterosyllabic rising sonority sequences (e.g. [p.s], [g.n], [s.n], [s.l], [s.r], [n.r], [l.r], however, all violate syllable contact to some degree. Compare these syllable contact infractions below.

(62) Syllable contact infractions

Flat sonority	**Sequence**	**Distance**		
stop + stop	[p.t]	0	*captener*	'sustain'
sibilant + sibilant	[ts.s]	0	*faz-se*	'one makes'
nasal + nasal	[m.n]	0	*conmigo*	'with me'

Rising sonority				
stop + sibilant	[p.s]	1	*capsa*	'box'
stop + nasal	[g.n]	2	*significar*	'mean' (late)
sibilant + nasal	[s.n]	1	*asno*	'ass'
sibilant + lateral	[s.l]	2	*fuslera*	'rifle'
sibilant + rhotic	[s.r]	3	*Israel*	'Israel'
nasal + rhotic	[n.r]	2	*enredar*	'snare'
lateral + rhotic	[l.r]	1	*colrar*	'color, redden'

Stop + /s/ sequences which rise a distance of only one unit (e.g. *capsa* 'box') and stop + stop sequences (e.g. *captener* 'sustain') with flat sonority are both heterosyllabic. Within heterosyllabic sequences, coda-onset syllable contact violations up to two units were tolerated in Old Spanish. Severe violations such as nonsibilant obstruent + liquid, however, are not permitted and are remedied by tautosyllabification, cf. *soplar* 'blow' (*[p.l], three units), *quatro* 'four' (*[.t.r], four units). As was the case in Latin, these obstruent + liquid sequences (3-4 units) were always tautosyllabic in Old Spanish. In Spanish, however, the occurrence of /s/ + rhotic sequences such as *Israel* 'Israel', whose segments are apparently also separated by three units yet heterosyllabic, raises some important issues in regard to sonority, syllable contact, and syllabification. Compare the following sequences.

(63) Syllable contact and syllabification

				[.dr]	4
		[d.l]	3	[s.r]	3
[d.n]	2	[s.l]	2	[n.r]	2
[s.n]	1			[l.r]	1

Unlike tautosyllabic sequences such as /bl/ and /gl/, /dl/ and /sr/ are heterosyllabic. Unless the sonority scale in (16) above is modified so as differentiate stops of different places of articulation as well as voicing (e.g. Murray 1987), however, there is no way to account for this difference in syllabification by means of sonority, since all of these sequences have the same syllable contact distances (i.e. 3 units).

Furthermore, when /dn/ or /dl/ resulted from syncope, metathesis occurred, e.g. RETINA > **riedna* > *rienda* 'rein', CAPITULU > *cabidlo* > *cabildo* 'chapter'. Likewise, /nr/ and /lr/ either metathesized or were broken up by consonant epenthesis, e.g. GENERU > *yerno* 'son-in-law', *TENERAT > *tenerá* > *terná/tendrá* 'will have', **colrear* > *corlear* 'color', *VALERAT > *valrá* > *valdrá* 'will be worth'[35]. Table 41 provides some examples of metathesis.

[35] Perhaps the nonoccurrence of sibilant affricate + liquid sequences (e.g /tʃl/) is also due to constraints on syllable contact.

Table 41 **Metathesis in Old Spanish**

/nr/	
CINERATA > *kenrada > *cernada*	'ash'
GENERU > *jenro > *yerno*	'son-in-law'
TENERU > *tienro > *tierno*	'tender'
TENERE HABEO >*ten(e)ré > *terné*	'have-FUT'
VENIRE HABEO > *ven(i)ré > *verné*	'come-FUT'
PONERE HABEO> *pon(e)ré > *porné*	'put-FUT'
/dl/	
SPATULA > *espadla > *espalda*	'shoulder'
CAPITULU > *kabidlo > *cabildo*	'chapter'
DATE ILLI > *dadle ~ dalde*	'give to him'
DICITE ILLI > **dezidle* > *dezidle*	'tell to him'
PONITE ILLI > **ponedle* > *ponelde*	'put to him'
/dn/	
RETINA > *riedna > *rienda*	'rein'
LEGITIMU > *lidmo > *lindo*	'pretty'
SEROTINU > *serodno > *serondo ~seroño*	'over-ripe'
CATENATU > *kadnado > *candado ~ cañado*	'padlock'

These changes have been viewed as motivated by syllable contact (Vennemann 1988). If this is the case, why were other syllable contact infractions of the same magnitude (e.g. *asno* 'ass', *fuslera* 'rifle') not remedied? The answer appears to be that some sequences (e.g. /tl/, /dl/, /sr/) simply could not be tautosyllabic, even when all of the conditions for tautosyllabicity were met. One way of incorporating this observation into a theory of phonotactic constraints is simply by positing constraints such as *[.tl], *[.dl], *[.sr]. Otherwise stated, although there is nothing intrinsic to the sonority or syllable contact of these segments which prevented tautosyllabicity, there was some other property (undefined for now) which disfavored their syllabification in the same syllable.

2.3.5. **CCC sequences**

All permitted tautosyllabic obstruent + liquid sequences (i.e. nonsibilant obstruent + liquid) could also follow /s/ or nasal.

Table 42 **Obstruent + Liquid Following /s/ or Nasal**

spl	*desplegar*	'unfold'
mpl	*Pamplona*[36]	(place name)
skl	*mesclar*	'mix'
nkl	*ancla*	'anchor'
sbl	*esblandir*	'sharpen'
mbl	*tiemblar*	'tremble'
sgl	*musglos*	'shovel-like tool'
ngl	*ingle*	'groin'
sfl	*esflaquecer*	'make/become thin'
nfl	*enflaquecer*	'make/become thin'
*ssl		
nsl	*transladar*	'transport'
spr	*despreciar*	'scorn'
mpr	*temprano*	'early'
str	*nuestro*	'our(s)'
ntr	*entrar*	'enter'
skr	*escrevir*	'write'
nkr	*concreto*	'concrete'?
sbr	*desbraçar*	'dismember'

[36] Outside of Navarre-Aragonese texts, this form occurs once in *Tratado de la generación de la criatura* (1495).

mbr	*miembro*	'member'
sdr	*Esdra*[37]	(*Ezra*, biblical name)
ndr	*ondra*	'honor'
sgr	*desgracia*	'misfortune, disfavor'
ngr	*cangrejo*	'crab'
sfr	*esfregar*	'rub'
nfr	*enfrenar*	'stop, break'
*ssr		
*nsr		

After /s/, a following stop was normally voiceless, e.g. *nuestro*. However, forms with /sbr/, /sdr/, /sgr/, etc. are attested, e.g. *esblandir, Esdra, esgrima*, which contrast with the strict prohibition of voiced stops after /s/ in Latin. Such forms are either borrowings (e.g. *esgrima* 'fencing') or contain a morpheme boundary like *es-blandir, des-braçar*, etc.

Although both postconsonantal obstruent + /l/ and obstruent + /r/ are indeed attested, examples of postconsonantal stop + /l/ are quite infrequent. The scarcity of postconsonantal stop + /l/, as opposed to frequent stop + /r/ sequences (e.g. *temprano, entrar, escrivir*, etc.) is due to the early palatalization of these sequences. In the following examples, early syncope created a postconsonantal stop + /l/ sequence which developed to /tʃ/ or /ɳ/, e.g. TRUNCULU > *[tronklo] > [trontʃo] (Menéndez-Pidal 1980 [1904]: 164).

(64) Palatalization of postconsonantal stop + /l/

stl

[37] This word appears in the *Biblia Escorial* (C. 1300) several times.

ntl	*CINCT(U)LU	*cincho*	'belt'
skl	MASC(U)LU	*macho*	'male'
nkl	TRUNC(U)LU	*troncho*	'trunk'
*sgl			
ngl	UNG(U)LA	*uña*	'nail'

No obstruent + liquid sequence could follow a liquid. This restriction appears motivated by the two liquids in the potential sequence, e.g. *lpl, *rpl. This constraint is discussed in more depth in Chapters 5 and 6.

(65) Nonoccurring liquid + obstruent + liquid sequences

*LTL (e.g. lpl, lkl, lpr, ltr, lkr, rpl, rkl, rpr, rtr, rkr, etc.)

In addition to stop + liquid, stop + nasal (e.g. /dn/, /gn/) could apparently follow a nasal early on, e.g. *sangne* in early Old Spanish. The second nasal in these sequences, however, eventually came to dissimilate, e.g. OS *sangne* > *sangre*. The upshot of this change is that no postconsonantal stop + nasal sequences occurred in Old Spanish.

(66) Stop + nasal following a nasal or /s/

ndn	LENDINE	*liendre*	'nit'
ngn	INGUINE	*ingle*	'groin'
	SANGUINE	(*sangne* >) *sangre*	'blood'

Furthermore, postconsonantal /s/ + obstruent occurred. Although all of these examples entered by learned channels, many are present in the earliest stages of Spanish.

Table 43 **Posconsonatal /s/ + Obstruent Sequences**

*psp		
ksp	*expulsar*	‘expel’
nsp	*transportar*	‘transport’
*lsp		
rsp	*perspe(c)tiva*	‘perspective’

*pst		
kst	*sexto*	‘sixth’
nst	*instante*	‘instant’
lst	*solsticio*	‘solstice’
rst	*superstición*	‘superstition’

*psk		
ksk	*excusar*	‘excuse’
nsk	*transcurso*	‘passing’
lsk	*Volscos*	‘Vulscians, ancient people of Latium’
*rsk[38]		

Although all of the examples above contain a voiceless stop after the /s/ (e.g. *sexto, solsticio*, etc.), the prefix *trans-* could be added to almost any root, whether beginning with a voiced stop (e.g. *trans-gressión* ‘transgression’), fricative (e.g. *trans-ferir*), or sonorant (e.g. *trans-ladar* ‘transport, move’). Many forms prefixed with *trans-* suffered deletion of the /n/, e.g. *trasladar, trasnochar* ‘stay the night’, etc. Because of the productivity of this prefix, more cases of /ns/ + consonant occur than other sequences such as /ls/, /rs/, etc. (see Table 44 below).

[38] A more recent example is *perscrutar* ‘examine’

Stop + stop sequence could not follow a consonant.

(67) Nonoccurrence of postconsonantal stop + stop

*spt *mpt *lpt *rpt

*skt *nkt *lkt *rkt

In contrast to postconsonantal obstruent + liquid sequences, which syllabified as [C.CC], these postconsonantal /s/ + stop sequences syllabified as [CC.C]. Recall that /s/ + stop was always heterosyllabic, e.g. *fiesta* [fjes.ta] 'party', and word-final stop +/s/ could occur, e.g. *orebs* 'goldsmith'. The syllabification of a CCC sequences, then, is always resolvable into its component parts.

These data pertaining to CCC sequences are summarized in Table 44. This table only includes the stops, the fricatives /f/ and /s/, and the sonorants, since these are the only phonemes which occur in sequences in Old Spanish.

Table 44 **Spanish CCC Sequences**

Legend

	Occurring
	Occurring only in learned or borrowed words
	Occurring at a morpheme/word boundary
	Nonoccurring

	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
pp	ppp	ppb	ppt	ppd	ppk	ppg	ppf	pps	ppm	ppn	ppl	ppr
pt	ptp	ptb	ptt	ptd	ptk	ptg	ptf	pts	ptm	ptn	ptl	ptr
ps	psp	psb	pst	psd	psk	psg	psf	pss	psm	psn	psl	psr
tt	ttp	ttb	ttt	ttd	ttk	ttg	ttf	tts	ttm	ttn	ttl	ttr
kt	ktp	ktb	ktt	ktd	ktk	ktg	ktf	kts	ktm	ktn	ktl	ktr
kk	kkp	kkb	kkt	kkd	kkk	kkg	kkf	kks	kkm	kkm	kkl	kkr
ks	ksp	ksb	kst	ksd	ksk	ksg	ksf	kss	ksm	ksn	ksl	ksr

gm	gmp	gmb	gmt	gmd	gmk	gmg	gmf	gms	gmm	gmn	gml	gmr
gn	gnp	gnb	gnt	gnd	gnk	gng	gnf	gns	gnm	gpn	gnl	gnr
sp	spp	spb	spt	spd	spk	spg	spf	sps	spm	spn	spl	spr
st	stp	stb	stt	std	stk	stg	stf	sts	stm	stn	stl	str
sk	skp	skb	skt	skd	skk	skg	skf	sks	skm	skn	skl	skr
sb	sbp	sbb	sbt	sbd	sbk	sbg	sbf	sbs	sbm	sbn	sbl	sbr
sd	sdp	sdb	sdt	sdd	sdk	sdg	sdf	sds	sdm	sdn	sdl	sdr
sg	sgp	sgb	sgt	sgd	sgk	sgg	sgf	sgs	sgm	sgn	sgl	sgr
ff	ffp	ffb	fft	ffd	ffk	ffg	fff	ffs	ffm	ffn	ffl	ffr
sf	sfp	sfb	sft	sfd	sfk	sfg	sff	sfs	sfm	sfn	sfl	sfr
ss	ssp	ssb	sst	ssd	ssk	ssg	ssf	sss	ssm	ssn	ssl	ssr
mp	mpp	mpb	mpt	mpd	mpk	mpg	mpf	mps	mpm	mpn	mpl	mpr
mb	mbp	mbb	mbt	mbd	mbk	mbg	mbf	mbs	mbm	mbn	mbl	mbr
nt	ntp	ntb	ntt	ntd	ntk	ntg	ntf	nts	ntm	ntn	ntl	ntr
nd	ndp	ndb	ndt	ndd	ndk	ndg	ndf	nds	ndm	ndn	ndl	ndr
nk	nkp	nkb	nkt	nkd	nkk	nkg	nkf	nks	nkm	nkn	nkl	nkr
ng	ngp	ngb	ngt	ngd	ngk	ngg	ngf	ngs	ngm	(ngn)	ngl	ngr
nf	nfp	nfb	nft	nfd	nfk	nfg	nff	nfs	nfm	nfn	nfl	nfr
ns	nsp	nsb	nst	nsd	nsk	nsg	nsf	nss	nsm	nsn	nsl	nsr
mm	mmp	mmb	mnt	mmd	mmk	mmg	mmf	mms	mmm	mmn	mml	mmr
mn	mnp	mnb	mnt	mnd	mnk	mng	mnf	mns	mnm	mnn	mnl	mnr
nn	nnp	nnb	nnt	nnd	nnk	nng	nnf	nns	nnm	nnn	nnl	nnr
lp	lpp	rpb	lpt	lpd	rpk	lpg	lpf	lps	lpm	lpn	lpl	lpr
lb	lbp	rbb	lbt	lbd	lbk	lbg	lbf	lbs	lbm	lbn	lbn	lbr
lt	ltp	rtb	ltt	ltd	ltk	ltg	ltf	lts	ltm	ltn	ltl	ltr
ld	rdp	rdb	ldt	ldd	ldk	ldg	ldf	lds	ldm	ldn	ldl	ldr
lk	rkp	rkb	lkt	lkd	lkk	lkg	lkf	lks	lkm	lkn	lkl	lkr
lg	lgp	rgb	lgt	lgd	lgk	lgg	lgf	lgs	lgm	lgn	lgl	lgr
lf	lfp	lfb	lft	lfd	lfk	lfg	lff	lfs	lfm	lfn	lfl	lfr
ls	lsp	lsb	lst	lsd	lsk	lsg	lsf	lss	lsm	lsn	lsl	lsr
lm	lmp	lmb	lmt	lmd	lmk	lmg	lmf	lms	lmm	lmn	lml	lmr
ln	lnp	lnb	lnt	lnd	lnk	lng	lnf	lns	lnm	lnn	lnl	lnr
ll	llp	llb	llt	lld	llk	llg	llf	lls	llm	lln	lll	llr
rp	rpp	rpb	rpt	rpd	rpk	rpg	rpf	rps	rpm	rpn	rpl	rpr
rb	rbp	rbb	rbt	rbd	rbk	rbg	rbf	rbs	rbm	rbn	rbl	rbr
rt	rtp	rtb	rtt	rtd	rtk	rtg	rtf	rts	rtm	rtn	rtl	rtr
rd	rdp	rdb	rdt	rdd	rdk	rdg	rdf	rds	rdm	rdn	rdl	rdl
rk	rkp	rkb	rkt	rkd	rkk	rkg	rkf	rks	rkm	rkn	rkl	rkr
rg	rgp	rgb	rgt	rgd	rgk	rgg	rgf	rgs	rgm	rgn	rgl	rgr
rf	rfp	rfb	rft	rfd	rfk	rfg	rff	rfs	rfm	rfn	rfl	rfr
rs	rsp	rsb	rst	rsd	rsk	rsg	rsf	rss	rsm	rsn	rsl	rsr
rm	rmp	rmb	rmt	rmd	rmk	rmg	rmf	rms	rmm	rmn	rml	rmr
rn	rnp	rnb	rnt	rnd	rnk	rng	rnf	rns	rnm	rnn	rnl	rnr
rr	rrp	rrb	rrt	rrd	rrk	rrg	rrf	rrs	rrm	rrn	rrl	rrr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

As Table 44 illustrates, the following natural classes occurred in Old Spanish.

(68) Wellformed word-medial CCC

sibilant/(non-liquid) sonorant + obstruent + liquid

consonant + /s/ + obstruent

2.3.6. **CCCC sequences**

Like postconsonantal /s/ + obstruent, postconsonantal /s/ + obstruent + liquid could also occur, e.g. *perscrevir* 'register', *subscrivir* 'sign'. Words like this, however, were extremely rare.

2.4. **Structural gaps in Old Spanish**

In a study of syncope in Spanish, Anderson (1969) concludes that syncope in Spanish resulted in the following consonantal (particularly stop + stop) structural gaps.

Table 45 **Structural Gaps Observed in Spanish Syncope**

	Labial	Dental	Palatal	Velar
Labial	-	+	-	-
Dental	-	+	-	+
Palatal	-	-	-	-
Velar	-	-	-	-

According to this table, labials, palatals, and velars could not co-occur, i.e. (-). Furthermore, dentals could not precede other places (except for velar). Anderson's observation was that although syncope applying after a labial introduced labial sequences such as /bd/, /bdz/, and coronal sequences such as /dg/, sequences such as /bg/ and /db/ were not created. The relationship of these gaps to patterns in Ibero-Romance syncope will be examined in Chapters 4-6.

These restrictions are reminiscent of the Latin Coda Condition, prohibiting noncoronal + noncoronal and coronal + noncoronal sequences. The table differs from Latin, however, in the absence of syncopies leading to labial + dental sequences—that is, /pt/ and /bd/ were wellformed (e.g. *captivo, cobdo*), but /kt/ and /gd/ were not. A similar table can be produced for Latin.

Table 46 **Structural Gaps in Latin**

	Labial	Dental	Palatal	Velar
Labial	-	+	-	-
Dental	-	+	-	-
Palatal	-	-	-	-
Velar	-	+	-	-

Original Latin /pt/ and /kt/ sequences were not continued in Ibero-Romance, e.g. SEPTE > *siete* 'seven', FACTU > *hecho* 'done'. In Old Spanish, however, these sequences were reintroduced in learned words (e.g. *apto, efecto*). Other learned prefixes such as *sub* 'beneath' led to new place combinations like labial + palatal, e.g. *subgeto* 'subject', *subiudgar* ‘compromise oneself’ (late). These sequences are at morpheme boundaries, however, and it is clear that, outside of these few words, palatals could not occur in consonant sequences.

Thus it appears that Anderson’s generalizations only held early on in Old Spanish monomorphmic word-medial CC sequences (see Table 34). The difference between Table 45 and Table 47 is that Table 45 is based on synchronic data from Old Spanish, rather than on syncope data. Parentheses represent the presence of a sequence in either learned or ploymorphemic words, e.g. /bdʒ/, /tp/, /db/, /tk/, /dg/, /tsp/, /dzb/, etc.

Table 47 **Structural holes in Old Spanish (CC sequences)**

	Labial	Dental	Palatal	Velar
Labial	-	(+)	(+)	-
Dental	+	+	(+)	+
Palatal	-	-	-	-
Velar	-	(+)	-	-

2.5. **Chapter Conclusions**

This chapter has examined the phonotactics and syllable structure of Old Spanish. The generalizations found are summarized below. Syllabification is given in brackets, e.g. tautosyllabic [.CC] or [CC.] or heterosyllabic [C.C].

Table 48 **Old Spanish phonotactic generalizations (summary)**

Across-the-board

*coronal + noncoronal
*noncoronal + noncoronal
*coronal + lateral

Word-initial

[.CC]

Rising sonority

nonsibilant obstruent + liquid

Word-final

[CC.]

Falling sonority

sibilant + stop

sonorant + nonapproximant

Rising sonority

stop + (anterior) sibilant

Word-medial

[C.C]

Flat, falling, rising sonority, Syllable contact < 3

consonant + consonant

[.CC]

Rising sonority, Syllable contact > 2

nonsibilant + approximate

[C.CC]

Falling-rising sonority, Syllable contact < 0

sibilant/(non-liquid) sonorant + obstruent + liquid

[CC.C]

Rising-falling sonority, Syllable contact = 1

consonant + /s/ + obstruent

[CC.CC]

Rising-falling-rising sonority, Syllable contact = 1

consonant + /s/ + obstruent + liquid

APPENDIX TO CHAPTER 2

Table 49 **Apocope (CCV) in Old Spanish versus Old Portuguese**

		Old Spanish	Old Portuguese	
sp				
mp	CAMPU	*Camp* (*d'Espina*)	*campo*	(place name)
np				
lp				
	(COLUPU	*colp*	*golpe*	'blow')
rp				
st	*ACCUISTE	*aquest*	*aqueste*	'this'
	FUSTE	*fust*	*fuste*	'rod'
	TRISTE	*trist*	*triste*	'sad'
mt				
nt	FONTE	*fuent*	*fonte*	'fountain'
	PONTE	*puent*	*ponte*	'bridge'
	MONTE	*mont*	*monte*	'mountain'
lt		*Arnalt, Bernalt, Tibalt*		(place names)
rt	FORTE	*fuert*	*forte*	'strong'
	PARTE	*part*	*parte*	'part'
	SORTE	*suert*	sorte	'luck'
bk	AURIFICE	*orebz* (~*orebze*)	*ourives*	'goldsmith'
dk	DUODICE	*doz* (~ *do(d)z*e)	*doze*	'twelve'
gk				
sk	DEMASCU	*Damasc*	*Demasco*	(place name)
mk				
nk	*EX-TUNCE	*estonç*/*estonz*	*estonce(s)*	'then'
	*ROMANICE	*romanz*	*romance*	'vulgar tongue'
	*SANCIU	*Sanch*[39]	*Sancho*	(name)
	QUINDICE	*quinz* (~ *quinze*)	*quinze*	'fifteen'
		estanc		'pond'
	*GC *frank(u)*	*franc*	*franco*	'generous'
lk	CALICE	*calz* (~ *calze*)	*couce*	'river bed'
		Folc		(place name)
rk		*alterz*?		'triple (in dice)'
		Çerz, Lerz		(place name)
	SORICE	*sorç*?		'mouse'
sb				
mb				
nb				
lb		*Alcalb*		(place name)

[39] This form is found in Castilian territory, and in Alfonso X himself.

rb		*Algarb*, *Sogorb*		(place name)
sd				
md				
nd	COMITE	*cuend*	*conde*	‘count’
	INDE	*end*	*ende*	‘thence’,
	UNDE	*ond*	*onde*	‘whence’
ld		*alca(l)ld*		‘mayor’
		Arnald, Bernald, Tibald		(place name)
rd	VERDE	*verd*? (TDMS)	*verde*	‘green’
s(g)				
n(g)				
m(g)				
l(g)				
r(g)		*Barg, Alfarg*		(place name)
sf				
mf				
nf				
lf				
rf		*Atharf*		(place name)
ps	AURIFICE	*orebs*[40] (~ *orebses*)	*ourives*	‘goldsmith’
ts				
ks				
bs				
ds				
gs				
fs				
ss				
ms				
ns	CENSU	*çens*		‘census (tax)’
ls				
rs	*MARTIU	*Mars* (name)		(place name)
sm				
mm				
nm				
lm		*Guillelm, Riquelm*		(names)
rm	FIRME	*firm*	*firme*	‘firm’
sn				
mn	(H)OMINE	*omn*	*homen*	‘man’
nn				
ln				
rn	CARNE	*carn*	*carne*	‘meat’
sl				
ml				
nl				
ll				
rl				
sr				
mr				
nr				

[40] This form is very rare.

lr
rr

CHAPTER 3

THE PHONOTACTICS OF OLD PORTUGUESE

3.1. Introduction

In this chapter, we examine the consonantal phonotactics of Old Portuguese. Phonotactic generalizations are formulated, and a comparison with Old Spanish is undertaken.

The earliest surviving records of a distinctively Portuguese language are administrative documents from the ninth century, interspersed with many phrases in Latin. This earliest stage, designated as Pre-Portuguese, was spoken between the 9th andthe 12th centuries.

Portugal became an independent kingdom in 1143 under King Alfonso Henriques, marking the first phase of Old Portuguese, often referred to as Galician-Portuguese (from the 12th to 14th centuries). During this period, a wealth of epic poems known as *Cantigas* were written.

During the overseas expansion of Portugal between the 14th and 16th centuries, the Portuguese language was introduced into many regions of Asia, Africa, and the Americas. The end of this discovery period usually marks the end of Old Portuguese. The beginning of the Modern Portuguese period (16th century to the present) also coincides with the publication of the *Cancioneiro Geral* by Garcia de Resende in 1516.

By the 16th century, Portuguese had become a *lingua franca* in Asia and Africa, facilitating colonial administration and trade. Mixed marriages and Catholic missionary effort were both contributing factors in the survival of Portuguese in these areas. Some Portuguese-speaking Christian communities in India, Sri Lanka, Malaysia, and Indonesia have preserved their languages, mainly in the form of creoles, even after their independence from Portugal.

Today, more than 210 million people throughout the world speak Portuguese as their native language. Portuguese is the eighth most spoken language in the world (third most spoken western European language after English and Spanish) and is the official language of seven countries (largest to smallest): Brazil, Mozambique, Angola, Portugal, Guinea-Bissau, Cabo Verde, and São Tomé & Príncipe.

3.2. **The sounds of Old Portuguese**

Old Portuguese possessed the following 22 consonant phonemes.

Table 50 **Old Portuguese Consonants**

	Bilabial		Labio-dental		Dental		Alveolar		Palatal		Velar	
Stop	p	b			t	d					k	ɡ
Affricate							ts	dz	tʃ	dʒ		
Fricative			f	v			s	z	ʃ	ʒ		
Nasal		m				n						
Lateral								l		ʎ		
Rhotic							ɾ	r				

As seen in Chapter 2, lenition (voicing/fricativization/degemination in intervocalic position) drastically altered the consonant inventory of Latin. The Portuguese outcomes of the Latin labial stops and [w] are given below.

(69) “Lenition” in Portuguese

	Latin	Old Portuguese		
p	CUPPA	*copa*	[kɔpa]	‘cup’
pp	CŪPA	*cuba*	[kuba]	‘wine vat’
b	CIBU	*cevo*	[tsevu]	‘food, bait’
w	CAVA	*cava*	[kava]	‘cave’

Recall that Latin possessed both singleton and geminate consonants. As illustrated above, intervocalically, all geminate obstruents reduced to singleton stops, and original Latin voiceless stops voiced. While in most cases the voiced stops became fricatives, there are some additional peculiarities.

Intervocalically, Latin /b/ and /w/ merge to /v/, which is retained. Latin /d/ deletes in most cases (e.g. LAMPADA > *lamp(a)a* ‘lamp), and /g/ sometimes deletes (e.g. *legāle* > *lial* ‘loyal’) and sometimes is retained *plaga* > *chaga* ‘wound’). The Old Portuguese voiced stops /b d g/, whatever their origin, appear not to have evolved to [β ð ɣ] until rather recently (i.e. Brazilian and other colonial varieties of Portuguese do not participate in this innovation).

As seen in Chapter 2 for Spanish, the fricatives /f s/ also developed voiced allophones intervocalically, i.e. /f/ > [v], /s/ > [z]. Since Latin /s/ had voiced to [z] intervocalically in most of Western Romance (e.g. CASA > OS/P/C/OO *ca*[z]*a* ‘house’), when /ss/ degeminated, this [s] ~ [z] contrast became unpredictable and phonologized. As in Old Spanish, <ç> normally represented /ts/, and <z> /dz/.

The sonorants /m n l r/ develop somewhat differently from the obstruents when intervocalic, but also lose their length contrast.

(70) Sonorant development

	Latin	Old Portuguese		
m	AMĀRE	*amar*	[amar]	'love'
mm	FLAMMA	*chama*	[tʃama]	'flame'
n	CANE	*cãe*	[kãe]	'dog'
nn	ANNU	*ano*	[anu]	'year'
l	SALĪRE	*sair*	[sair]	'to leave'
ll	CABALLU	*cavalo*	[kavalu]	'horse'
r	CĀRU	*caro*	[kaɾu]	'expensive'
rr	CARRU	*carro*	[karu]	'wagon'

As illustrated above, singleton coronal nasals and laterals delete, and their corresponding geminates reduce. When /n/ deletes, nasalization is retained on the preceding vowel, e.g. CANE > *[kãne] > [kãe]. As in Spanish, both /m/ and /mm/ merge, and the rhotic distinction (i.e. /r ~ rr/) is retained, but in the form of tap/trill.

Like Modern Portuguese, Old Portuguese had the following seven vowel system, with the additional dimension of nasal vowels, yielding 12 contrastive vowels.

Table 51 **Vowel Phonemes**

i						**u**
	e				**o**	
		ɛ		**ɔ**		
			a			

ĩ				**ũ**
	ẽ		**õ**	
		ã		

The distinctive vowel length of Latin was lost in Late Latin and Romance. However, unlike Spanish, Portuguese did not diphthongize the low mid vowels /ɛ ɔ/, cf. S *siete* [je] ~ P *sete* [ɛ] 'seven'.

Although Portuguese diphthongs did not come from the low mid vowels, processes such as consonant deletion (i.e. VCV > VV) and glide formation (i.e. VV > VG), much more intense in Portuguese than in Spanish, led to many new diphthongs and triphthongs.

In Old Portuguese, the glides [j] and [w], which may have derived from the corresponding high vowels /i/ and /u/, could combine with both oral and nasal vowels, producing the following vowel sequences.

Table 52 **Diphthongs and triphthongs**

a. VG

aw	*ausente* 'absent', *mau* 'bad'
ɛw	*deus* 'god', *meu* 'mine'
ew	*comeu* 'ate-3SG'
ow	*houve* 'had-1SG', *ouro* 'gold'
iw	*fio* 'thread', *rio* 'river'
aj	*mais* 'more', *raiva* 'anger'
ej	*peito* 'chest', *aceitar* 'accept'
oj	*coiro* 'leather', *oitavo* 'eighth', *pois* 'then'
ɔj	*sóis* 'sun-PL'
uj	*ascuitar* 'listen', *fruito* 'fruit' (old)
GV	
ja	*cadeia* 'chain', *rávia* 'anger' (old)
ju	*creio* 'believe-1SG', *ébrio* 'drunk'
wa	*égua* 'mare', *igual* 'equal', *santuário* 'sanctuary'
wu	*santiguo* 'sanctify-1SG'

b. GVG

jɛj	*fiéis* 'loyal-PL'
wɛj	*cruéis* 'cruel-PL'
wej	*santigüei* 'sanctified-1SG'

As seen in Spanish, diphthongs agreeing in place (backness/roundness and height) did not occur in Portuguese (i.e. *[ji], *[ij], *[wu], *[uw]). The only exception to this constraint is the labiovelar sequence [gwu], normally arising only within verbal paradigms (e.g. *santigu-* 'sanctify').

Comparing the vowel inventories of both Spanish (Chapter 2, Tables 3 and 4) and Portuguese reveals that Portuguese has many more falling diphthongs and triphthongs than Spanish, e.g. /ei/, /ow/, /jej/, etc.

3.3. Consonantal phonotactics

This section examines the consonantal phonotactics of Old Portuguese, following a structure similar to § 2.3.

3.3.1. **Word-initial consonants and consonant sequences**

Table 53 Word-Initial Consonants:

p	**t**		**k**
b	**d**		**g**
	ts	**tʃ**	
	(dz)	**dʒ**	
f	**s**		
v			
m	**n**		
	l, r		

	p	t	k	b	d	g	ts	tʃ	dz	dʒ	f	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	ɾ
WI	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓			✓	✓		✓		✓
WF									✓			✓			✓			˜		✓		✓
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

As seen for Spanish, the Classical Latin rhotic [ɾ] was strengthened to a trill /r/ in word-initial and postconsonantal syllable-initial positions (e.g. *relha* 'grid', *Enrique* 'Henry'). One major difference between Spanish and Portuguese in the distribution of word-initial consonant phonemes is the retention of /f/ in all word-initial contexts in Portuguese, e.g. FABA > S *haba/* P *fava* 'fava bean'.

The following consonant sequences occur word-initially in Old Portuguese. Natural classes are enclosed in boxes. Parentheses indicate very infrequent sequences such as /pl/ or /dr/, which were normally introduced by learned channels.

Table 54 **Word-Initial C_1C_2 Sequences**

	p	t	k	b	d	g	f	ts	tʃ	dz	dʒ	s	ʃ	v	z	m	n	ɳ	l	ʎ	r
p																			(pl)		pr
t																					tr
k																			(kl)		kr
b																					br
d																					(dr)
g																			(gl)		gr
f																			(fl)		fr
ts																					
tʃ																					
dz																					
dʒ																					
s																					
ʃ																					
v																					
z																					
ʒ																					
m																					
n																					
ɳ																					
l																					
ʎ																					
r																					
	p	t	k	b	d	g	f	ts	tʃ	dz	dʒ	s	ʃ	v	z	m	n	ɳ	l	ʎ	r

As seen for Spanish, initial CC sequences were limited to obstruent + liquid. However, the most noticeable difference between Spanish and Portuguese is the nearly complete absence of obstruent + /l/ sequences in Old Portuguese. In addition to the inherited restriction on */tl/ and */dl/, some sequences like /bl/ did not occur at all. Others like /fl/ and /pl/ were very infrequent, occurring normally in learned words which already in early Portuguese alternated with their corresponding *r*-form, e.g. *flor, frol* (but popular *chor*!).

Table 55 **Examples of Word-Initial Voiceless Obstruent + Liquid Sequences**

C_1 = Labial

pl	*planeta*[41] *'planet'*, *pleito* 'trial'
*bl	
fl	*flor*[42] 'flower', *flume* 'river'
*vl	
pr	*pregar* 'pray', *pressa* 'haste'
br	*braço* 'arm', *braga* 'pant'
fr	*freixo* 'ash tree', *frio* 'cold'
*vr	

C_1 = Coronal [+anterior]

tr	*três* 'three', *tr(i)igo* 'wheat'
dr	*dragão*[43] 'dragon', *drudo* 'friend'
*sr	
*zr	

C_1 = Dorsal

kl	*claro*[44] 'clear', *clérigo*'clear'
gl	*glória*[45] 'glory'
kr	*crer* 'believe', *cru* 'raw'
gr	*grande* 'large', *grilo* 'grasshopper'

[41] The forms *praneta* (14th century), *preito* (13th century) are also attested.
[42] The forms *frol/chor* were not uncommon in the 13th century (DELP).
[43] According to DELP, *drago* (from Greek) and *drudo* (from French) may be attested as early as the 14th century.
[44] According to DELP, *claro* is attested in the 14th century, and *craro* (13th century) continues in use until the 16th century. Also *clérigo* (14th century), *crérigo* (13th century).
[45] Also *grólia* (14th century).

The constraint on obstruent + /l/ is laxed in later medieval and modern Portuguese, in which instances of /bl/ (e.g. *blasfemar* ‘blaspheme, attested in the 15th century) are not uncommon. Although /kr/ and /gr/ are perfectly acceptable, /kl/ and /gl/ are quite infrequent prior to the 14th century, e.g. *glória* ‘glory’.

As seen in Spanish, non-anterior coronals (i.e. palatals) did not occur before either /l/ or /r/, e.g. */tʃl/, */tʃr/. In contrast to their wellfomedness in Old Spanish, however, the coronal fricatives and affricates /s/, /z/, /ts/, and /dz/ also could not precede the liquids in Old Portuguese, cf. OP *jará* ~ OS *jazrá* ‘will lie’. Recall that */sl/, */sr/ similarly did not occur in Latin.

As in Latin, /dr/ was rare, and early on found only in the word *dragão* ‘dragon’ and *drudo* ‘friend’. As discussed for Spanish in Chapter 2, /s/ + obstruent sequences always surface as heterosyllabic sequences in Portuguese (e.g. [s.p], [s.t], [s.k]). In word-initial position, this constraint led to prosthesis, e.g. STAT > *está* ‘is’.

3.3.2. **Word-final consonants**

Only the following consonants occurred in word-final position.

Table 56 Word-Final Consonants

dz
s
z
n
l, r

	p	t	k	b	d	g	f	ts	tʃ	dz	dʒ	s	ʃ	v	z	ʒ	m	n	ɳ	l	ʎ	ɾ
WI	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓			✓	✓		✓		✓
WF										✓		✓			✓					✓		✓
WM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 57 **Examples of word-final consonants in Old Portuguese:**

Obstruents

dz *az* ‘sharpness’, *paz* ‘peace’ (cf. PL *a*[dz]*es, pa*[dz]*es*)

s *comes* ‘you eat’, *menos* ‘less’

z *mes* ‘month’, *pôs* ‘he put’ (cf. PL *me*[z]*es*), *po*[z]*este* ‘you put’)

Sonorants

l *sal* ‘leave!’, *sol* ‘sun’ (cf. PL *sóis*)

r *amor* ‘love’, *mar* ‘sea’ (cf. PL *amores, soles*)

From the above data, it is clear that stops did not occur in word-final position. This suggests that stops in general could not occur in syllable coda. Unlike Spanish, Portuguese allows only sonorants and (anterior) sibilants in coda position. In the treatment of syncope in Chapters 4-5, it is shown how this coda condition also restricted syncope.

Recall that Classical Latin tolerated the following word-final consonants.

Table 58 **Word-Final Consonants in Latin**

(p)	**t**	**k**
b	**d**	
	s	
m	**n**	

l, r

Recall from Chapter 2 that word-final stops were deleted early on in Hispano-Romance, although orthography lags somewhat behind, e.g. SALĪVIT > OS *saliot, -d* 'he left' (Penny, 1991). Table 59 below illustrates the development of word-final stops in Old Spanish and Portuguese.

Table 59 **Word-Final Stop Deletion in Hispano-Romance**

	Latin	Spanish	Portuguese	
p[46]				
b	SUB	*so*	*so*	'under'
t	AUT	*o*	*ou*	'or'
	CAPUT	*cabo*	*cabo*	'head, end'
d	ALIQUOD	*algo*	*algo*	'something'
	QUID	*que*	*que*	'that'
k	DĪC	*di*	*di*	'tell-IMP'
	ILLĪC	*allí*	*ali*	'there'
*g				

Of Latin's ten word-final consonants, only /s, m, n, l, r/ survive into the earliest Hispano-Romance. Furthermore, Latin /m/ is retained in monosyllables and deletes in larger words. In Spanish, this /m/ becomes /n/, and in Portuguese the nasal deletes after nasalizing the preceding vowel (e.g. *com* [kõ] 'with'). The liquid /r/ normally metathesized, e.g. SEMPER > S/P *sempre* 'always', QUATTUOR > S/P *quatro* 'four'. At this stage, it is apparent that only coronal sonorants and sibilants (i.e. /s/, /z/, /ts/, and /dz/) occurred word-finally. In this dissertation, this constraint is referred to as the Coronal Coda Condition.

[46] To my knowledge, there is only one case here, VOLUP 'willingly', which is not continued in Romance.

Table 60 **Word-Final Consonants in Early Hispano-Romance**

s
n (< m, n)
l
(r)

3.3.2.1. **Apocope in Portuguese**

Apocope of /e/ and sometimes /o/ also affected pre-literary Portuguese. In terms of extending apocope, Spanish (especially later Old Spanish) was much more radical than Portuguese (see Chapter 2). Common Spanish and Portuguese forms (i.e. Proto-Hispano-Romance) are reconstructed in Table 61 below.

Table 61 **Occurrence of Apocope in Early Hispano-Romance**

Context	Latin	PHR	OS	OP	
ts/dz[47]	FACIE	*fats	*faz/haz*	*faz*	'face'
	PACE	*pats	*paz*	*paz*	'peace'
s/z	MENSE	*mes	*mes*	*mês*	'month'
	POSUIT	*pos	*(puso)*	*pôs*	'he put'
n	CANE	*kan	*can*	*cam*	'dog'
l	SŌLE	*sol	*sol*	*sol*	'sun'
r	MARE	*mar	*mar*	*mar*	'sea'

In Spanish and Portuguese, apocope extended the range of wellformed codas from earlier /s n l r/ to /ts s n l r/. Therefore, the consonants after which apocope applied at this stage corresponded almost identically to those permitted in coda position in early Hispano-Romance, i.e. the sonorants and sibilants.

[47] Note that /ts/ was realized as [dz], and /s/ as [z]. This voicing eventually became phonemic.

Evidence from early Spanish and Portuguese demonstrates that apocope did not occur early on after other obstruents such as /p t k/, geminates such as /ss/[48], and consonant sequences like /pt/ and /kt/.

Table 62 **Nonoccurrence of apocope in early Hispano-Romance**

Context	Latin	PHR	OS	OP	
After obstruent[49]					
t/d	RETE	*rete	*ret/red*	*rede*	'net'
After geminate					
ss	TUSSE	*tosse	*tos*	*tosse*	'cough'
ll	VALLE	*valle	*valle*	*vale*	'valley'
rr	TURRE	*torre	*torre*	*tôrre*	'tower'
After original consonant sequence					
Flat or falling sonority					
pt	SEPTE	*sɛtte	*siete*	*sete*	'seven'
kt	NOCTE	*nɔkte	*noche*	*noite*	'night'
ps	IPSE	*esse	*esse/es*	*esse*	'that'
ks	AXE	*akse	*exe*	*(eixo)*	'axis'
sp					
st	ISTE	*este	*este*	*êste*	'this'
sk	PISCE	*pestʃe	*peç(e)*[50]	*peixe*	'fish'

[48] Some cases are known to exist, e.g. REVERSE > *revese > S/P *revés* 'opposite'. Still, it is generally assumed that apocope in Portuguese only occurred after "short s" (Williams, 1938: 47).

[49] In the case of /dʒ/, e.g. HODIE > *odʒe > S *(h)oy,* P *(h)oje* 'today', it is not clear whether Spanish *hoy* derives from deletion of the palatal before a front vowel rather than apocope, i.e. */odʒe/ > [oe] > [oj].

rp	SERPE	*sɛrpe	*sierpe*		'snake'
rt	FORTE	*fɔrte	*fuerte*	*forte*	'strong'
rk					
Rising sonority					
tr	PATRE	*padre	*padre*	*pai*	'father'

Although Portuguese failed to undergo apocope in all of the above contexts, early Old Spanish (i.e. before *apocope extrema*) extended apocope to all post-coronal contexts, provided the coronal was a singleton to begin with or a geminate already reduced to singleton, e.g. /ss/ > [s]. Although the earliest Spanish has apocope after /t/ and /ss/, the absence of apocope here in Portuguese suggests that apocope early on did not apply in these contexts. Based upon this evidence from apocope, it is clear that the only word-final consonants permitted in early Hispano-Romance were sonorants and (anterior) coronal sibilants (i.e. /s/, /ts/, and their voiced counterparts.).

Table 63 **Word-final consonants (early Hispano-Romance)**

ts
s
z
n
l, r

Portuguese further reduces this six-phoneme inventory by deleting postvocalic /n/ and intervocalic /l/.

[50] In Old Spanish, there are six occurrences of *peçe* in Calilia y Dimna (1251/1280). Like other cases of postconsonantal /ts/ (< /kj/), early variability of apocope for original /skj/ shows that apocope was extended in the early stages of Spanish to the context /ts/.

(71) Early Portuguese /n/ and /l/ deletion

Latin	Early Old Portuguese		
CUM	*con*	[kõ]	'with'
CANE	*cam*	[kã]	'dog'
CANES	*cães*	[kães]	'dogs'
SŌLE	*sol*	[sɔl]	'salt'
SŌLES	*sóis*	[sɔjs]	'salts'

Postvocalic nasals were deleted, with concomitant nasalization of the preceding vowel, e.g. [kãn] > [kã]. Forms like *can* and *sol*, instead of ***cãe* and ***soe/soi* demonstrate that apocope preceded /n/ and /l/ deletion. Therefore, /n/ and /l/ were likely among the inventory of word-final consonants in Proto-Hispano-Romance, and consequently pre-Portuguese. Some dialects like modern Brazilian Portuguese have eliminated word-final /l/ as well, e.g. *sol* [sɔw].

3.3.2.2. **Word-Final C_1C_2 sequences**

Due to the deletion of all word-final Latin stops (e.g. /st#/ and /nt#) and absence of *apocope extrema* in Portuguese, there were no final CC sequences.

3.4. **Word-medial consonant sequences**

As seen in § 2.4, syncope led to many new word-medial sequences. The effects of syncope in Spanish and Portuguese are discussed in depth in Chapters 4 and 5.

The following table presents the CC sequences occurring in Old Portuguese. Only non-boundary sequences (i.e. not occurring at a morphological boundary) were taken into account for the groupings. Boundary sequences are, however, given in bold. Asterisks (*) indicate earlier sequences, e.g. /ll/, /nn/, which were early on altered (i.e. to /l/, /n/, etc).

Table 64 **Word-Medial CC Sequences**

	p	**t**	**k**	**b**	**d**	**g**	**f**	**v**	**ts**	**tʃ**	**dz**	**dʒ**	**s**	**ʃ**	**z**	**ʒ**	**m**	**n**	**ɳ**	**l**	**ʎ**	**r**
p																						pr
t																						tr
k													ks									kr
b																						br
d																						dr
g																						gr
f																						fr
v																						
ts																						
tʃ																						
dz																						
dʒ																						
s	sp	st	st		sd	sg	**sf**	**sf**									sm	sn		**sl**		sr
ʃ																						
z																						
ʒ																						
m	mp			mb																		
n		nt	nk		nd	ng	nf	nv	nts	ntʃ	ndz	ndʒ	ns				*mm	*nn				nr
ɳ																						
l	lp	lt	lk		ld	lg	lf	lv	lts		ldz	**ldʒ**	ls				lm	ln		*ll		lr
ʎ																						
r	rp	rt	rk		rd	rg		rv	rts	**rtʃ**	rdz	**rdʒ**	rs				rm	rn		rl		rr
	p	**t**	**k**	**b**	**d**	**g**	**f**	**v**	**ts**	**tʃ**	**dz**	**dʒ**	**s**	**ʃ**	**z**	**ʒ**	**m**	**n**	**ɳ**	**l**	**ʎ**	**r**

In contrast to Spanish, the set of word-medial CC sequences is quite restricted. It is possible to make the following three major class divisions. More fine-grained generalizations are given in parentheses. For instance, although sequences like /pr/ indeed belong to the nonsibilant obstruent + approximate group, it is more accurate to state that it is only stop + rhotic which was permitted in Old Portuguese. The same is true of stop + /s/.

(72) Wellformed word-medial CC classes

sonorant/sibilant + consonant

stop + sibilant (voiceless stop + /s/)

nonsibilant + approximant (nonsibilant + rhotic)

3.4.1. **Word-medial sonority and syllabification**

Table 16 gives some examples of word-medial CC sequences. Within each natural class, gaps are reflected by the absence of listed forms. Sequences are grouped by their syllabification (heterosyllabic or tautosyllabic) and their natural class.

Table 65 **Examples of Word-Medial CC Sequences**

Heterosyllabic sequences

Sibilant + consonant

dzb

dzg

dzd

dzm	
dzn	
dzl	
dzr	(*jará* 'will lie' ~ *jazer*, perhaps underlying)
sp	*vespa* 'wasp', *bispo* 'bishop'
st	*festa* 'day of rest'
sk	*pescar* 'fish', *rascar* 'scratch'
sb	
sd	*desde* 'from', *desdem* 'disdain'
sg	*pesgar* 'burden', *rasgar* 'rip'
sf	*des#fazer* 'undo', *satisfazer* 'satisfy'
sv	*des#vergonçado* 'shameless'
sm	*mesmo* 'same', *esmola* 'alms', *quaresma* 'fortieth'
sn	*asno* 'mule'
sl	*des#leal* 'disloyal'?
sr	*Isr(r)ael* (learned)

Sonorant + consonant

mp	*campo* 'field', *tempo* 'weather'
mb	*ambos* 'both', *tumba* 'tomb'
nt	*contar* 'tell'
nk	*fincar* 'drive in'
nd	*andar* 'walk', *conde* 'count'
ng	*angosto* 'narrow', *fongo* 'mushroom'
nts	*esperança* 'hope', *vergonça* 'shame'
ntʃ	*ancho* 'wide', *encher 'fill'*
nʒ	*anjo* 'angel', *monge* 'monk'

nf	*enfermo* 'sick', *i(n)fante* 'prince'
ns	*ánsar* 'wild goose', *cansado* 'tired'
nv	*envés* 'reverse'
nz	
nm	
nn	*canna* > *cana* 'sugar cane'
nl	
nr	*genro* 'son-in-law'
lp	*golpe* 'blow'
lt	*alto* 'high', *solto* 'loose'
lk	*calcanhar* 'heel'
lb	
ld	*caldo* 'warm', *soldo* 'coin'
lg	*algo* 'something', *pulga* 'flea'
lts	*alçar* 'raise', *calçado* 'shoe(d)'
ltʃ	
ldz	*Salzeda* (placename)
ldʒ	*indulgencia* 'indulgence'
lf	*alfiler* 'pin'
ls	*falso* 'false', *pulso* 'backfire'
lʃ	
lv	*alva* 'dawn'
lz	
lm	*alma* 'soul'
ln	*mol(n)eira* 'miller'
ll	(*sella* > *sela* 'saddle')
lr	*valrá* 'will be worth'

rp	*corpo* ‘body’
rt	*furtar* ‘rob’, *porta* ‘door’
rk	*porco* ‘pig’
rb	
rd	*lardo* ‘fat’
rg	*cargar* ‘load’
rts	*cárcer* ‘prison’, *força* ‘force’
rtʃ	*percha* ‘stand’ (borrowing)
rdz	*irze* ‘salmon’
rdʒ	*per#iurio* ‘perjury’, *cirurjano* ‘surgeon’?
rf	
rs	*urso* ‘bear’ (learned)
rʃ	
rv	*corvo* ‘crow’, *servo* ‘servant’
rz	
rm	*ermida* ‘hermitage’
rn	*perna* ‘leg’
rl	*burla* ‘joke’, *merla* ‘blackbird’, *orlar* ‘border’
rr	*carro* ‘cart’, *fer(i)rá* ‘will strike’, *terrá* ‘will have’

Stop + /s/

ks, gz	*examinar/esaminar* ‘examine’, *exaltar* ‘raise’

Tautosyllabic Sequences

Stop + rhotic

pr	*soprar* 'blow'
tr	*quatro* 'four'
kr	*secreto* 'secret'
dr	*quadro* 'picture'
br	*estabro* 'stable', *obrigar* 'oblige'
gr	*milagre* 'miracle', *sagrado* 'holy'
fr	*sofrer* 'suffer'

As Table 65 illustrates, there were no heterosyllabic stops word-medially. Otherwise stated, no stops occurred word-medially in coda position. As mentioned in § 2.3.3, all cases of new word-medial codas were the result of syncope. Like apocope, syncope was much more extreme in Spanish, admitting new coronal and labial stops, which Portuguese eschewed, e.g. CUBITU > *cobdo/cóvedo* 'elbow', JUDICĀRE > *judgar/ju<d>igar* 'swear', DICIMU/-A > *diezmo/dízima* 'tithe', and many more to be examined in Chapters 4-5.

In § 2.3.4), the following sonority scale was proposed for Old Spanish.

(73) Sonority

Obstruents		Sonorants			
Nonsibilants	Sibilants	Nasals	Laterals	Rhotics	Glides/Vowels
0	1	2	3	4	5

SONORITY →

The word-medial sequences above in Table 65 can also be classified on the basis of their sonority and syllabification (see § 2.3.4). As was the case for Spanish, except for nonsibilant + liquid sequences, all word-medial CC sequences are heterosyllabic[51]. Table 66 presents a classification of all word-medial CC sequences on the basis of sonority.

Table 66 **Sonority and Syllabification of CC Sequences**

Flat sonority

none

Falling sonority

sibilant + stop	[s.t]	*festa*	'day of rest'
nasal + stop	[n.t]	*contar*	'tell'
lateral + stop	[l.t]	*alto*	'high'
rhotic + stop	[r.t]	*porta*	'door'
sibilant + fricative	[s.f]	*desfazer*	'undo'
nasal + fricative	[n.s]	*ánsar*	'wild goose'
lateral + strident	[l.s]	*urso*	'bear'
rhotic + strident	[r.s]	*persona*	'person'
rhotic + nasal	[r.n]	*perna*	'leg'
lateral + nasal	[l.n]	*mol(n)era*	'miller, dam'
rhotic + lateral	[r.l]	*burla*	'joke'

Rising sonority

stop + sibilant	[k.s]	*examinar*	'examine'
stop + rhotic	[.tr]	*quatro*	'four'
sibilant + nasal	[s.n]	*asno*	'ass'
sibilant + lateral	[s.l]	*desleal*?	'disloyal'
sibilant + rhotic	[s.r]	*Israel*	'Israel'
nasal + lateral	?		
nasal + rhotic	[n.r]	*genro*	'son-in-law'
lateral + rhotic	[l.r]	*valrá*	'will be worth'

[51] Coronal stop + lateral metathesized early on, e.g. *cabidlo* > *cabildo* 'chapter'.

Only falling and rising sonority contours are found in Old Portuguese. As was seen for Old Spanish (§ 2.3.4), all heterosyllabic rising sonority sequences *a priori* violate the principle of syllable contact, which prefers more sonorous codas (§ 0.2.1), e.g. [k.s], [s.n], [s.l], [s.r], [n.r], [l.r]. Syllable contact infractions are computed below.

(74) Syllable contact infractions

Rising sonority

stop + sibilant	[k.s]	1	*examinar*	'investigate'
sibilant + nasal	[s.n]	1	*asno*	'ass'
sibilant + lateral	[s.l]	2	*desleal* ?	'disloyal'
sibilant + rhotic	[s.r]	3	*Israel*	'Israel'
nasal + rhotic	[n.r]	2	*genro*	'son-in-law'
lateral + rhotic	[l.r]	1	*valrá*	'will be worth'

Coda-onset syllable contact violations up to 3 units were tolerated in Old Portuguese. Nonsibilant + rhotic sequences, however, are heterosyllabic, indicating that syllable contact violations greater than 3 units were not tolerated, e.g. *quatro* 'four' (*[t.r]). Thus, in addition to the absence of nonsibilant + lateral sequences in Portuguese, the main distinction between Spanish and Portuguese is the tolerance of syllable contact violations of 2-3 units to this day in Portuguese, cf. S *yerno*, P *genro* 'son-in-law' (§ 2.3.4).

3.4.2. **CCC sequences**

As discussed in § 2.3.4, obstruent + liquid sequences could also follow a nasal or /s/. Recall that, apart from some learned words, word-initial obstruent + /l/ was infrequent in Old Portuguese. In postconsonantal position, this was also true. Compare the examples below to those presented in Table 67.

Table 67 **Obstruent + Liquid Following a Nasal or /s/**

spr	*desprezar*	'scorn'
mpr	*comprar*	'buy'
str	*destra*	'right (hand)'
ntr	*entrar*	'enter'
skr	*escrever*	'write'
nkr	*concreto*	'concrete'?
sbr	*desbravar*	'tame'
mbr	*lembrar*	'remember'
*sdr		
ndr	*endro*	'dill'
sgr	*desgraça*	'misfortune, disfavor'
ngr	*angra*	'bay'
sfr	*esfregar*	'rub'
nfr	*enfraquecer*	'make/become thin'
*ssr		
*nsr		

Postconsonantal stop + /l/ also palatalized in Portuguese (see § 2.3.4). The Portuguese outcomes of these examples are given below.

(75) Palatalization of postconsonantal stop + /l/

stl	AST(U)LA	*acha*	'sliver'
ntl	*CINCT(U)LU	*cincho*	'belt'
skl	MASC(U)LU	*macho*	'male'
nkl	TRUNC(U)LU	*troncho*	'trunk'
*sgl			
ngl	UNG(U)LA	*unha*	'nail'

Unlike Spanish, Portuguese did not permit postconsonantal stop + nasal (e.g. /dn/, /gn/. Compare the lack of syncope in Portuguese in the forms below.

(76) Blocking of syncope leading to stop + nasal

		OS	OP	
*ndn	LENDINE	*liendre*	*lêndea*	'nit'
*ngn	SANGUINE	*sangne*	*sangue*	'blood'

As in Spanish, obstruent + liquid sequence could not follow a liquid. This restriction appears motivated by the two liquids in the potential sequence, e.g. *lpl (Chapters 5 and 6).

(77) Nonoccurring liquid + obstruent + liquid sequences

*LTL (e.g. lpl, lkl, lpr, ltr, lkr, rpl, rkl, rpr, rtr, rkr, etc.)

As was the case for Spanish (§ 2.3.5), postconsonantal /s/ + stop occurred in Old Portuguese, although all of these examples entered by learned channels.

Table 68 **Posconsonatal /s/ + stop sequences**

*psp		
*ksp		
nsp	*transportar*	'transport'
*lsp		
rsp	*perspectiva*	'perspective'
*pst		
kst	*sexto*	'sixth'
nst	*instante*	'instant'
lst	*solsticio*	'solstice'
rst	*supersticão*	'superstition'
*psk		
*ksk		
nsk	*transcurso*	'passing'
*lsk		
*rsk		

Recall from § 2.3.4 that the prefix *trans-* could be added to almost any root. The situation was almost the same in Portuguese (e.g. *trans-gredir* 'transgress', *trans-ferir*, *trans-ladar* 'transport, move'). Furthermore, postconsonantal stop + stop sequences failed to occur. Thus sequences such as the following were unattested in both Spanish and Portuguese.

(78) Nonoccurrence of postconsonantal stop + stop

*spt *mpt *lpt *rpt

*skt *nkt *lkt *rkt

Table 69 presents all occurring CCC sequences. Again, only stops, the fricatives /f/ and /s/, and the sonorants are taken into account, since these are the only phonemes which could occur in sequences in early Hispano-Romance.

Table 69 **Portuguese CCC Sequences**

Legend

	Occurring
	Occurring only in learned or borrowed words
	Occurring at a morpheme/word boundary
	Nonoccurring

	p	b	t	d	k	g	f	s	m	n	l	r
pp	ppp	ppb	ppt	ppd	ppk	ppg	ppf	pps	ppm	ppn	ppl	ppr
pt	ptp	ptb	ptt	ptd	ptk	ptg	ptf	pts	ptm	ptn	ptl	ptr
ps	psp	psb	pst	psd	psk	psg	psf	pss	psm	psn	psl	psr
tt	ttp	ttb	ttt	ttd	ttk	ttg	ttf	tts	ttm	ttn	ttl	ttr
kt	ktp	ktb	ktt	ktd	ktk	ktg	ktf	kts	ktm	ktn	ktl	ktr
kk	kkp	kkb	kkt	kkd	kkk	kkg	kkf	kks	kkm	kkm	kkl	kkr
ks	ksp	ksb	kst	ksd	ksk	ksg	ksf	kss	ksm	ksn	ksl	ksr
gm	gmp	gmb	gmt	gmd	gmk	gmg	gmf	gms	gmm	gmn	gml	gmr
gn	gnp	gnb	gnt	gnd	gnk	gng	gnf	gns	gnm	gpn	gnl	gnr
sp	spp	spb	spt	spd	spk	spg	spf	sps	spm	spn	spl	spr
st	stp	stb	stt	std	stk	stg	stf	sts	stm	stn	stl	str
sk	skp	skb	skt	skd	skk	skg	skf	sks	skm	skn	skl	skr
sb	sbp	sbb	sbt	sbd	sbk	sbg	sbf	sbs	sbm	sbn	sbl	sbr
sd	sdp	sdb	sdt	sdd	sdk	sdg	sdf	sds	sdm	sdn	sdl	sdr
sg	sgp	sgb	sgt	sgd	sgk	sgg	sgf	sgs	sgm	sgn	sgl	sgr
ff	ffp	ffb	fft	ffd	ffk	ffg	fff	ffs	ffm	ffn	ffl	ffr
sf	sfp	sfb	sft	sfd	sfk	sfg	sff	sfs	sfm	sfn	sfl	sfr
ss	ssp	ssb	sst	ssd	ssk	ssg	ssf	sss	ssm	ssn	ssl	ssr
mp	mpp	mpb	mpt	mpd	mpk	mpg	mpf	mps	mpm	mpn	mpl	mpr
mb	mbp	mbb	mbt	mbd	mbk	mbg	mbf	mbs	mbm	mbn	mbl	mbr
nt	ntp	ntb	ntt	ntd	ntk	ntg	ntf	nts	ntm	ntn	ntl	ntr
nd	ndp	ndb	ndt	ndd	ndk	ndg	ndf	nds	ndm	ndn	ndl	ndr
nk	nkp	nkb	nkt	nkd	nkk	nkg	nkf	nks	nkm	nkn	nkl	nkr
ng	ngp	ngb	ngt	ngd	ngk	ngg	ngf	ngs	ngm	ngn	ngl	ngr
nf	nfp	nfb	nft	nfd	nfk	nfg	nff	nfs	nfm	nfn	nfl	nfr
ns	nsp	nsb	nst	nsd	nsk	nsg	nsf	nss	nsm	nsn	nsl	nsr
mm	mmp	mmb	mnt	mmd	mmk	mmg	mmf	mms	mmm	mmn	mml	mmr
mn	mnp	mnb	mnt	mnd	mnk	mng	mnf	mns	mnm	mnn	mnl	mnr
nn	nnp	nnb	nnt	nnd	nnk	nng	nnf	nns	nnm	nnn	nnl	nnr
lp	lpp	rpb	lpt	lpd	rpk	lpg	lpf	lps	lpm	lpn	lpl	lpr
lb	lbp	rbb	lbt	lbd	lbk	lbg	lbf	lbs	lbm	lbn	lbn	lbr
lt	ltp	rtb	ltt	ltd	ltk	ltg	ltf	lts	ltm	ltn	ltl	ltr
ld	rdp	rdb	ldt	ldd	ldk	ldg	ldf	lds	ldm	ldn	ldl	ldr
lk	rkp	rkb	lkt	lkd	lkk	lkg	lkf	lks	lkm	lkn	lkl	lkr
lg	lgp	rgb	lgt	lgd	lgk	lgg	lgf	lgs	lgm	lgn	lgl	lgr
lf	lfp	lfb	lft	lfd	lfk	lfg	lff	lfs	lfm	lfn	lfl	lfr
ls	lsp	lsb	lst	lsd	lsk	lsg	lsf	lss	lsm	lsn	lsl	lsr
lm	lmp	lmb	lmt	lmd	lmk	lmg	lmf	lms	lmm	lmn	lml	lmr
ln	lnp	lnb	lnt	lnd	lnk	lng	lnf	lns	lnm	lnn	lnl	lnr
ll	llp	llb	llt	lld	llk	llg	llf	lls	llm	lln	lll	llr
rp	rpp	rpb	rpt	rpd	rpk	rpg	rpf	rps	rpm	rpn	rpl	rpr

rb	rbp	rbb	rbt	rbd	rbk	rbg	rbf	rbs	rbm	rbn	rbl	rbr
rt	rtp	rtb	rtt	rtd	rtk	rtg	rtf	rts	rtm	rtn	rtl	rtr
rd	rdp	rdb	rdt	rdd	rdk	rdg	rdf	rds	rdm	rdn	rdl	rdl
rk	rkp	rkb	rkt	rkd	rkk	rkg	rkf	rks	rkm	rkn	rkl	rkr
rg	rgp	rgb	rgt	rgd	rgk	rgg	rgf	rgs	rgm	rgn	rgl	rgr
rf	rfp	rfb	rft	rfd	rfk	rfg	rff	rfs	rfm	rfn	rfl	rfr
rs	rsp	rsb	rst	rsd	rsk	rsg	rsf	rss	rsm	rsn	rsl	rsr
rm	rmp	rmb	rmt	rmd	rmk	rmg	rmf	rms	rmm	rmn	rml	rmr
rn	rnp	rnb	rnt	rnd	rnk	rng	rnf	rns	rnm	rnn	rnl	rnr
rr	rrp	rrb	rrt	rrd	rrk	rrg	rrf	rrs	rrm	rrn	rrl	rrr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

As Table 69 illustrates, the following natural classes occurred in Old Portuguese. Recall that similar constraints obtained in Spanish (§ 2.3.5)

(79) Wellformed word-medial CCC

sibilant/(non-liquid) sonorant + obstruent + rhotic

consonant + /s/ + obstruent

3.4.3. **CCCC sequences**

As in Spanish (§ 2.3.5), postconsonantal /s/ + stop + liquid could also occur in Portuguese, e.g. *subscrever* 'sign'. Such words were normally attested quite late.

3.5. **Structural gaps in Old Portuguese**

In § 2.4, it was seen how Anderson's generalizations in regard to syncope only held for the phonotactics of very early Old Spanish. On the basis of the data in Table 64, the following table can be constructed for Old Portuguese.

(80) Structural holes in Old Portuguese (CC sequences)

	Labial	Dental	Palatal	Velar
Labial	-	-	-	-
Dental	-	(+)	-	-
Palatal	-	-	-	-
Velar	-	(+)	-	-

Stop + stop sequences were entirely absent in Portuguese. Otherwise stated, noncoronal + noncoronal and labial + coronal (cf. OS *cibdad* 'city') always failed to occur in Old Portuguese. Furthermore, aside from occasional learned forms with /ks/ (e.g. *examinar* 'examine'), and /s/ + stop sequences (e.g. *festa* 'party), no other feature combinations were possible.

As mentioned in § 3.3.1, the most notable gaps in Portuguese include obstruent + /l/, e.g. medial /pl/, /tl/, kl/, and their voiced counterparts. Another consequence of syncope was that new palatals were brought in contact with other consonants, e.g. SALICE > OS *salze* 'willow', OP *Salzeda* (place name). In both Portuguese and Spanish, however, such palatals could not occur preconsonantally, except in the abovementioned cases of prefixation. As discussed above, Portuguese deleted /dz/ before /d/ and /r/ and /ts/ before /t/ where Old Spanish retained the sequence, e.g. PLACITU > *plazdo/prazo* 'time period', *JACERAT > *jazrá/jará* 'will lie', ACCEPTORE > *aztor/açor* 'hawk'. This appears to be another example of the Preconsonantal Coronal Decolorization Principle (see § 1.4.1).

3.6. **Chapter Conclusions**

This chapter has examined the phonotactics and syllable structure of Old Portuguese. The generalizations found are summarized below.

Table 70 **Old Portuguese phonotactic generalizations (summary)**

Across-the-board

*coronal + noncoronal
*noncoronal + noncoronal
*coronal + lateral
*nonsibilant + lateral

Word-initial

[.CC]

Rising sonority

nonsibilant + rhotic

Word-final

none

Word-medial

[C.C]

Falling, rising sonority, Syllable contact < 3

consonant + consonant

[.CC]

Rising sonority, Syllable contact > 3

nonsibilant + rhotic

[C.CC]

Falling-rising sonority, Syllable contact < 0

sibilant/(non-liquid) sonorant + obstruent + rhotic

[CC.C]

Rising-falling sonority, Syllable contact = 1

consonant + /s/ + obstruent

[CC.CC]

Rising-falling-rising sonority, Syllable contact = 1

consonant + /s/ + obstruent + rhotic

CHAPTER 4

SYNCOPE IN SPANISH & PORTUGUESE: C_1VC_2 SEQUENCES

4.1. Introduction: Syncope in Hispano-Romance

Both Chapters 4 and 5 examine syncope in Spanish and Portuguese. Chapter 4 focuses on the development of Latin/Proto-Romance CVC sequences, and Chapter 5 on the development of CCVC sequences. In Hispano-Romance, only the unstressed non-low vowels /e i o u/ were subject to syncope.

Many accounts of syncope in Hispano-Romance have sustained that pretonic position in some way behaves differently from posttonic position with respect to syncope (e.g. Pensado-Ruíz 1984). The data presented in this chapter offer evidence that word-position was not a significant variable in Hispano-Romance syncope.

Syncope often occurred between two consonants (C_1VC_2) in both Spanish and Portuguese, creating a CC sequence at the deletion site. All resulting CC sequences can be classified as either tautosyllabic or heterosyllabic. In Chapters 2-3, it was demonstrated that all word-medial nonsibilant + liquid sequences were tautosyllabic in both Spanish and Portuguese (e.g. /tr/, /dr/, etc.). All other attested word-medial sequences were heterosyllabic (e.g. /st/, /mp/, etc.). In the sections below, the possible effect of syllabification on syncope is examined.

One of the most striking differences between early Spanish and Portuguese is the absence of word-medial heterosyllabic C_1C_2 sequences in which C_1 is a non-sibilant obstruent in Portuguese (§ 3.4). Like apocope, syncope occurred very early on in both Spanish and Portuguese, and probably continued to operate independently throughout the history of both languages. For the most part, everywhere that Portuguese shows syncope, Spanish does as well. The reverse is not true, however. Spanish extended the process to many contexts unknown to Portuguese.

The sections below are divided on the basis of the place of articulation (i.e. labial, coronal, dorsal) of the first consonant (C_1) in this CVC string. We start our discussion of syncope after a labial C_1.

4.2. Syncope after a labial consonant

While Old Spanish tolerated codas of any place or manner of articulation, the only permitted word-medial syllable codas in Old Portuguese were the sonorants, /s/, and probably /ts/ or /dz/ (§ 3.4).

In addition, Portuguese displays an overall intolerance for labial + /l/. Across languages, labial and dorsal consonants are often more restricted in terms of distribution than coronals. The effect of these constraints on syncope is investigated in the following data.

Table 1 presents forms in which syncope occurred in both Old Spanish and Old Portuguese. The convention of presenting Latin followed by Spanish and then Portuguese forms (even when not indicated) is followed throughout Chapters 4 and 5.

Table 71 **Syncope after a Labial**

a. Pretonic syncope

Latin	**Old Spanish**	**Old Portuguese**

pVt	APOT(H)ĒCA	*abdega*	*adega*	‘cellar’
	*RECAPITĀRE	*reca(b)dar*	*arrecadar*	‘get (done)’
	REPUTĀRE	*re(p)tar*	*re(p)tar*	‘challenge’
pVr	APERĪRE	*abrir*	*abrir*	‘open’
	COOPERĪRE	*cobrir*	*cobrir*	‘cover’
	RECUPERĀRE	*recobrar*	*recobrar*	‘recover’
	SUPERĀRE	*sobrar*	*sobrar*	‘be left over’
bVt	CĪVITĀTE	*cibdad*	*cidade*	‘city’
bVl	FĀBULĀRE	*fablar*	*falar*	‘speek’
	SĪBILĀRE	*silbar*	*silvar*	‘whistle’
	TABULĀRIA	*tableira*	*taleira*[52]	‘?’
bVr	LABŌRĀRE	*labrar*	*lavrar*	‘work’
	LĪBERĀRE	*librar*	*livrar*	‘free’
fVl	SĪFILĀRE[53]	*silbar*	*silvar*	‘whistle’
mVt	SĒMITĀRIU	*sendero*	*sendeiro*	‘path’
mVl	SIMILĀRE	*semblar*	*sembrar*	‘seem’
mVr	MEMORĀRE	*(re)membrar*	*membrar/lembrar*	‘remember’

b. Posttonic syncope[54]

pVt	CREPITA[55]	*grieta*	*greta*	‘crack’
pVl	POPULU	*pueblo*	*pobro*	‘folk’
pVr	JŪNIPERU	*enebro*	*jimbro?*	‘juniper’
	LEPORE	*liebre*	*lebre*	‘hare’
	OPERA	*huebra/obra*	*obra*	‘work’
	PAUPERE	*pobre*	*pobre*	‘poor’

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[52] Attested in 18th century (DELP).

[53] S *chillar*, C *xillar*, O *siflar*, F *siffler/chiffler* go back to the attested Latin form SĪFILĀRE, in turn borrowed most likely from another Italic dialect, Oscan.

[54] The preclitic or vocative use of DOM(I)NUS, -A (*don(a)*‘sir/lady’) occasioned early syncope or reduction in Latin as early as Plautus. .

[55] DCE argues for early syncope for Spanish and Portuguese, contradicting his position that *REPUTĀRE[55] > *re(p)tar* is not a possible native development.

bVl	DIABOLU[56]	*diablo*	*diabro* (*diabo*)	'devil'
	INSŪBULU[57]	*ensullo/enxullo*		'treadle of loom'
	SABULU	*sable*	*sa(i)bro*/G *jebra*	'sand'
	STABULU	*establo*	*estabro*	'stable'
	TRIBULU[58]	*trillo*	(*trilho*)	'threshing machine'
	ABILE	*-able*	*-abre*[59] (*ável*)	(suffix)
	-IBILE	*-ible*	*-ibre* (*ível*)	(suffix)
	PARABOLA[60]	*palabra/palavra*	*paravra* (*parávoa*)	'word'
bVr	LĪBER(U)[61]	*libre*	*livre*	'free'
	*RŌBOR(E)[62]	*roble*	*robre*	'oak'
	ZINGIBERE	*gengibre*	*gengibre/gengivre*	'ginger'
	*ŪBER(E)	*ubre*	*ubre*	'udder'
fVr	EQUIFERU?	*(en)zebro*	*zevro*	'wild ass'
mVt	COMITE	*conde*	*conde*	'count'
	DOMITU	*duendo*	*dondo*	'tame'
	LĪMITE	*linde*	*linde*	'border of property'
	SĒMITA	*senda*	*senda*	'path'
mVk	CĪMICE	*cisme/chisme*	*chimse/chisme*	'bedbug'
	*LIMĪCE[63]		*lesma*/G *lesme*	'snail'
mVl	CUMULU	*colmo*	*combro*[64]	'top'

[56] This word is learned, as the retention of /dj/ (instead of /d□/, cf. DEORSU > *juso* 'above') and /b/ demonstrate.
[57] Attested as unsyncopated s*ubol-* in AP.
[58] Attested as *tribla* in AP. Both OS and OP have this form, though the OP form appears to be borrowed. OI *trebbio*, as well as dialectal forms with /e/ for expected /i/, poses an unresolved problem regarding this etymon (see DCE for discussion). REW (1890:441) sees Romanian *trier* instead of **tri(b)ur* as aberrant and going back to syncopated **triblum*.
[59] Sletsj□e (1959: 228) comments that this form existed in OP, but the more common form was *–ável*.
[60] In OP, *palavra/palaura* seems to have been the most common form, but *palavoa* is attested between the 13th and 15th centuries (DELP). Williams believes the modern form *palavra* to be borrowed from Spanish, and indeed the attestation of another form *paravla* (13th century, DELP) may suggest that the modern form of this word was borrowed from Spanish, which had an identical form originally. The extension of this word with the meaning 'word' throughout all of Romance instantiates a common origin, whereas the verb PARABOLARE 'speak' is not found in Sp and Pg. Furthermore, the development of noun and verb is not parallel (cf. Cat *parola* ~ *parlar*).
[61] Although appearing early on in Spanish (1200), DCE considers this word and derived forms (e.g. LIBERARE) learned, and deriving rather from the nominative *liber*. In support of this, first off, is the *-e* ending and the scarcity of this word in Old French, where *franc* was preferred, cf. SEMPER 'always'.
[62] Note that the CL form was the neuter RŌBUR, and the Hispano-Romanceoutcomes could be metathesized reflexes of this form as well, cf. *s(i)empre* < SEMPER. Williams believes modern Pg *roble* to be borrowed from Sp, and DELP cites examples from the 12th ad 13th centuries in which an older *robre* occurs.
[63] These forms apparently stem from remade *LIMAX, -ACIS (CL LĪMAX, -ĀCIS), with an unexplained vowel change (REW, DELP). It is more plausible that a *LĪMICE was formed on the model of nouns like CĪMEX, -ICIS; the change of the first /i/ here could then be viewed a case of dissimilation, or perhaps analogy with nouns with short /i/ like FILICE 'fern'. The OP form is attested in the 15th century.

mVr	(H)UMERU	*hombro*	*ombro*	'shoulder'

Syncope leading to potential heterosyllabic [C.C] sequences occurred in both Spanish and Portuguese. Although heterosyllabic [C.C] sequences were normally preserved in Old Spanish, such sequences were always altered in Old Portuguese, e.g. OP *adega* 'cellar', *cidade* 'city'. Syncope in these contexts is discussed in § 4.2.1. When syncope led to tautosyllabic [.CC] sequences (i.e. between a nonsibilant + liquid), the sequence was normally maintained, except in the case of nonsibilant + lateral in Portuguese, e.g. OP *falar* 'speek' (via deletion), *silvar* 'whistle' (via metathesis), *pobro* 'people' (via rhotacism). § 4.2.2.1 discusses these processes.

The forms in Table 2 syncopated only in Old Spanish. Compare the Spanish outcomes with syncope in the first column to those of Portuguese without syncope in the second column.

Table 72 **Syncope after Labial**

Syncope occurred only in OS

a. Pretonic syncope

pVt	CAPITĀLE	*cabdal*	*cabedal*	'wealth'
pVd	LL CUPIDITIA	*cobdicia*	*cobiiça*	'greed'
pVn	GC *Rapinatī*	*Ramnate*	*Revinhade*	(place name)
pVl	POPULĀRE[65]	*poblar*	*povoar*	'populate'
bVt	*AVE-TARDA	*abtarda*	*abetarda*	(bird)

[64] Occurs in several 10th century Latin-Portuguese documents (DELP). Apparently, an unsyncopated *cômoro* also exists.

[65] DELP argues for derivation from OP *póvoo/póboo/pobro*, but I see no way of determining when this verb was derived. It is notable that *poblar/pobrar* are frequent in 13th century and *povoar/poborar* in the 14th. Despite DELP's claim that *póboo* is the oldest OP form, the examples cited are all from the 13th century, including *poblo/pobro*. Although this deserves further research, it seems to suggest that we are dealing with epenthesis

	DUBITĀRE	*dubdar*	*duvidar*	'doubt'
fVk	SANCTIFICĀRE	*santiguar*	*santivigar*	'sanctify'
fVd	BIFIDU[66]	*be(l)fo*	*(belfo)*	'with protruding lip'
mVk	*HAMICELLU		*armuzelo*	'fishhook'
	*HAMICEOLU[67]	*anzuelo*	*(amzolo)*	'fishhook'
mV(n)	SĒMINĀRE	*semnar*	*semear*	'spread'
	FĒMINA	*femna*	*fêmea*	'woman'

b. Posttonic syncope

pVt	NEPETA	*nieta*	*nêvoda*	'catnip'
pVd	LAPIDE	*labde*		'(grave)stone'
	RAPIDU	*rabdo*		'quick, violent'
	TRIPEDE(S)	*trebdes*		'trivet'
pVl	POPULU[68]	*pueblo*	*póboo* (*pobro*)	'folk'
pVr	ML APOPERE[69]	*abobra*	*abóbora*	'type of gourd'
bVt	CUBITU	*cobdo*	*côvedo/côvado*	'elbow'
	DĒBITA	*debda*	*dêvida/dívida*	'debt'
bVk	*AVICE	*abze*		'luck'
	*FRABICA	*fragua*	*frávega*	'forging'
bVl	DIABOLU[70]	*diabro*	*diáboo* (*diabro*)	'devil'
	NEBULA	*nebla*	*névoa*	'mist'

[66] The Spanish (and possibly OP) development reflects a metathesis of FD > DF (> lf); *d* > *l* suggests a Leonese origin to this word; DELP says the P word was borrowed from S. The preservation of the /f/ is due to the morphological boundary (DCE).
[67] Diminutive of CL HAMUS. According to DCE, P *anzol(o)* is a borrowing from Mozarabic. G *amacelo/amucelo*, OP *armuzelo* suggest another diminutive *HAMICELLU.
[68] The OF form *poblo* is found in *The Oaths of Strasburg* (9th century), and according to FEW and DEHF, the form *pueble* occurs in *Passion* (10th century). While forms with /pl/ are very common in OF texts, there are no istances of /bl/in the *Thresor de la langue françoyse* (1606), which spans the 12th through 14th centuries. On the basis of *pueble* > *peuple*, some consider this regression to /pl/ a learned trend, cf. OF *treble* (< TRIPLU) to *triple.* As for lack of syncope in Italian, Old Venetian *puovolo* seems to show popular development. Both Catalan forms are employed in early authors (e.g. Llull). Like Catalan, Occitan shows early variation, though in the COM the ratio of *poble* to *pobol* is 17/4.
[69] In San Isidore's etymology (10th century).
[70] This word is learned, as demonstrated by the retention of /dj/ (instead of /ʒ/, cf. DEORSU > *juso* 'above').

	NŪBIL-[71]	*nublo*	*núbia*	'cloud'
	ABILE	*-able*	*-ável*[72] (*-able*)	(suffix)
	-IBILE	*-ible*	*-ível* (*-ible*)	(suffix)
	PARABOLA	*palabra/palavra*	*parávoa* (*paravra*)	'word'
	TABULA[73]	*tabla*	*tábua*	'table'
fVk	AURIFICES	*orebzes*	*ourívezes*	'goldsmith-PL'
fVr	BIFERA	*bebra* (*breva*)	*bêvera*	'black fig'
mVt	AMITES	*andas*	*ámedes*	'fence rail'

As illustrated from the data above, syncope leading to a potential coda (e.g. *nêvoda* 'catnip') as well as complex onset (e.g. *bêvera* 'black fig', *abóbora* 'type of gourd') often failed to occur in Portuguese. These cases are discussed in § 4.2.1 and § 4.2.2).

In the following forms syncope failed to occur in both Spanish and Portuguese. The nonoccurrence of syncope in these contexts as these may represent a general constraint against such CC sequences (e.g. *bn). These cases are only posttonic.

Table 73 **No Syncope after Labial**

a. Pretonic syncope
   none

b. Posttonic[74]

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[71] OP form cited by REW not found in my etymological dictionary. More common *nuvem* 'cloud' said by the same author to stem from a *nubine* rather than *nubes*, explaining apparent dialectal forms *nubre* (Mirandese) and *nuvre* (Transmountain) with Castilian-like nasal dissimilation.
[72] Sletsjøe (1959: 228) comments that this form existed in OP, but the more common form was *–ável*.
[73] Attested as TABLA in AP. For OP, Williams believes a derivative *taleira* (< *tabularia*) to present the normal treatment of secondary /bl/, cf. *falar*. The dictionaries, however, show no instances of this word before the 18th century. It is clear that *tabua/taboa* 'board, writing table' is the most frequent form in OP, but there are cases of *tabla/tavla*, which may be 13th century Alphonsine borrowings from Spanish. Also *tavoa* (13th century) seems to indicate that forms with /b/ are perhaps learned.

bVn	JUVENES	*jóvenes*	*jovens*	'young-PL'
fVn	COPHINU	*cuévano*		'basket'

Although pretonic syncope could occur after a labial, this was not always the case in Portuguese. While indeed some words with pretonic /pVt/ (e.g. *adega*) and /bVt/ (e.g. *cidade)* show syncope in Portuguese, other forms like *cabedal* and *duvidar* clearly did not undergo syncope. Note that Spanish shows pretonic syncope much more persistently (OS *cabdal, dubdar*). However, it is significant that those forms continuing original /pVt/ and /bVt/ which fail to undergo syncope in Portuguese always voice C_2 in Spanish (e.g. *cabdal*, *dubdar*[75], etc.). This demonstrates that syncope in Spanish occurred after obstruent voicing in original intervocalic contexts, since syncope led to the loss of the intervocalic context which favored voicing, e.g. CAPITĀLE > *cabdal, **captal*).

Furthermore, note the cases in which /pVt/ syncopated in both Spanish and Portuguse with voicing of C_2 (e.g. *a(b)dega, (ar)reca(b)dar*). Combined with other independent clues such as the learned vowel development observed in DUBITĀRE (i.e. *dudar/duvidar*, ***dodar/ dovidar*), it is likely that all of these forms entered Hispano-Romance after the heyday of syncope of /pVt/ in Hispano-Romance. The fact that all the above forms with the possible exception of CĪVITĀTE syncopated only in Spanish is evidence that syncope of /bVt/ was probably a later innovation proper only to Spanish.

Furthermore, applying word-position (i.e. either pretonic or posttonic) arguments to forms such as *anzuelo/armuzelo* (< *HAMICE(O)LLU 'fishhook') and *c(h)isme* (< CIMICE

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[74] Other exceptions include VĪPERA, CAMERA, which should have syncopated in both Spanish and Portuguese. The first form may be (semi-)learned (DCE), and the second is attested in Late Latin as LL CAMARA (DCE, FEW).

[75] The relationship of *duvidar* to the deverbal noun *dúvida* could be the cause for retention of the vowel here. However, other cases such as *cab(e)dal, cabedel(o)/caudel*[75] 'chief' (< CAPITELLU), if in fact native, are harder to account for[75].

‘bedbug’) yields a completely opposite result, i.e the greater predisposition of posttonic contexts to syncope. In posttonic forms like *c(h)isme,* metathesis occurred, suggesting some difficulty with the new /mdz/ output. The fact that the same constraint did not apply in the case of OS *anzuelo*, as well as the lack of syncope in the Portuguese form, suggests more resistance to syncope in pretonic contexts. When the sequence finally arose in Spanish, the metathesis process was no longer active. The same is observed in the case of *tiemblar* (TREMULĀRE ‘tremble’) versus *colmo* (< CUMULU ‘top’), where again metathesis applies in a posttonic context[76].

In light of these contradictions, it appears that word-position was not a significant variable in Hispano-Romance syncope (*contra* Pensado-Ruíz 1984). In this dissertation, I argue instead that an account drawing on phonotactic constraints offers a more adequate account of the facts.

4.2.1 Syncope between labial and obstruent

4.2.1.1 C_2 is a coronal obstruent

Most of the data in Tables (1-3) continuing this environment are limited to cases in which C_2 is a coronal obstruent, particularly /t/ and /d/. In the case of the voiceless stop /t/, the interaction of intervocalic obstruent voicing and syncope is an invaluable tool for determining the relative chronology of syncope. In § 4.2.4 below, the interaction of voiced obstruent deletion and syncope will also provide some important chronological insights.

[76] The form *(álamo) tiemblo* is likely a deverbal noun of *tiemblar*.

In light of the absence of obstruent voicing in the above examples (e.g. REPUTĀRE, CREPITA, NEPETA > OS *retar, grieta*, *nieta,* ***rebdar*, ***gr(i)ebda*, ***niebda*[77]), it is clear that syncope after /p/ is earlier than that after /b/, e.g. CĪVITĀTE > OS *cibdad.* Syncope must have occurred early enough to create /pt/, protecting it from voicing. If later, both obstruents would have been intervocalic long enough to voice. Note that there are no forms without obstruent voicing in any other post-labial context but /pVt/. It is also the case that there are Spanish outcomes with syncope before voiced obstruent deletion in the environment /pVd/, e.g. LAPIDE > *labde, **lab(e)e.* This is also suggestive of earlier syncope after the voiceless stop.

Portuguese is not so straightforward. Although syncope in the context /pVt/ is attested, there are neverthess exceptions, e.g. NEPETA > *néveda* 'catnip'. Furthermore, the bulk of Portuguese forms without syncope in the context /pVd/ suggests that syncope did not reach this context in Portuguese, cf. LL CUPIDITIA > OS *cobdicia,* OP *cobiiça.* Syncope in the context /bVt/ is also scarce, e.g. CUBITU > *côvedo*. There is, however, one form with syncope in the context /bVt/, *cidade,* if not a borrowing from Spanish. How is one to treat these exceptions?

In the case of *néveda* (NEPETA), notice the irregular change of /p/ > /v/. This aberration along with the lack of syncope here suggest that this form probably was aligned with the -ITU class of words, e.g. *covedo* (CUBITU). Since many of these -ITU forms originally contained /vedo/ or /vida/, e.g. CUBITU, DEBITU/-A (*dêvedo/dívida*), DUBITA (*dúvida*), etc, it appears that that the change of /p/ > /v/ is analogical with these forms. Comparison with Spanish reveals that another form *nebda,* also developing like the above class (cf. *cobdo, debda, dubda*) is also attested. This variation can be

[77] The lack of diphthongization in the reported forms *neb(e)da, neuda* suggests some other origin.

understood in the following way. Forms with an unstressed high vowel were among the first forms to syncopate (e.g. *retar, gr(i)eta*). In both Spanish and Portuguese, NEPETA was attracted early on to forms with -ITU such as CREPITA, i.e. NEPETA ~ *NEPITA. While the variant with /e/ resisted syncope long enough to undergo obstruent voicing, i.e. **nébeda,* the variant with /i/ syncopated before voicing, i.e. *ne(p)ta*. This latter form survives in Spanish, i.e. *nieta*. The other /e/ variant later came to syncopate in S *nebda*[78]. In Portuguese, however, the /e/ form aligned itself with forms like CUBITU, DEBITU/-A , containing /vedo/ or /vida/, e.g. (i.e. **cóvidu* or **cóvedo*),

The above discussion has argued that the high vowels /i/ and /u/ were more subject to syncope than the mid vowels, particularly /e/. There is also evidence that /o/ resisted syncope, e.g. APOT(H)ĒCA > OS *abdega*, where the presence of obstruent voicing results from later syncope of the /pVt/ group.

4.2.1.2 C_2 is a noncoronal obstruent

There are very few forms which contain a noncoronal C_2. With the exception of prenasal contexts, syncope occurred before both originally coronal and dorsal segments in Spanish. In Portuguese, however, there was no syncope before dorsals. Compare the syncope in these two contexts.

(81) Syncope before coronal versus dorsal

a. Labial + coronal

APOT(H)ĒCA	*abdega*	*adega*	'cellar'

[78] This form lacks diphthongization, but to my knowledge there are no examples of mid diphthongs in a syllable closed by /b/.

LL CUPIDITIA	*cobdicia*		'greed'
CĪVITĀTE	*cibdat*	*cidade*	'city'

b. Labial + dorsal (i.e. palatal/velar)

*FRABICA	*fragua*	*frávega*	'forging'
SANCTIFICĀRE	*santiguar*	*santivigar*	'sanctify'

The occurrence of syncope in Portuguese before coronals (e.g. /pVt/, /bVd/) but not before dorsals (e.g. /bVk/, /fVk/) suggests that labial + dorsal contexts were probably originally more resistant to syncope. This can be understood by comparing the outputs of syncope in both of these contexts. Recall that early cases of syncope (i.e. /pVt/) joined preexisting /pt/ sequences, which came to assimilate to /tt/, later degeminating to /t/, e.g. CREPITA > **grepta* > *greta.* Later cases of syncope in this context along with /bVt/ also led to a labial + coronal sequence in early Hispano-Romance, e.g. APOT(H)ĒCA > OS *abdega,* OP *adega.* This original /bd/ sequence was maintained in Old Spanish, but assimilated in Old Portuguese. In contrast, syncope in contexts like /fVk/ and /bVk/ would have led to labial + dorsal output sequences, SANCTIFICĀRE > ***santibgar/santivgar* (i.e. /bg/ or /vg/), which apparently were not acceptable at this stage.

Although syncope came to occur in Spanish before either coronal or dorsal, metathesis of the labial + dorsal obstruent sequence occurred early on, i.e. /bVk/ > /bg/ > /gw/. Recall the nonoccurrence of coronal + noncoronal, noncoronal + coronal, and noncoronal + noncoronal obstruent sequences in Latin (i.e. the Latin Cluster Condition). Spanish metathesis of the /bg/ created a labiovelar /gw/, which, as a stop + glide, did not violate the restriction on noncoronal + noncoronal sequences. Thus it appears that the forces of syncope were strong enough to overcome this phonotactic constraint early on in

Spanish, i.e. the point at which the /bg/ sequence was created. Metathesis, however, appears to have rescued the /bg/ sequence from violating this constraint. This seems to suggest teleology—that is, this phonotactic force, although laxed during the advent of syncope, eventually somehow restored the havoc wreaked by syncope à la Jakobson[79].

4.2.2. **Syncope between labial and sonorant**

4.2.2.1 **C_2 is a liquid**

When a labial C_1 could syllabify as onset (i.e. [CV.C_1C_2V]) syncope occurred quite exceptionlessly in both Spanish and Portuguese. The clearest cases of this, corroborated from modern Spanish and Portugugese, are before /r/, e.g. *abrir* (APERĪRE 'open'), *librar/livrar* (LĪBERĀRE 'free'), etc. Furthermore, Spanish shows regular syncope before /l/, e.g. *pueblo* (POPULU 'people'*)* *hablar* (FABULĀRE 'speak'), etc. In Old (as well as modern Spanish), these obstruent + liquid sequences were tautosyllabic.

Recall that obstruent + /l/, which did not occur at all in early Portuguese is even to this day very infrequent. This is one major difference in the phonology of these two languages. Furthermore, in contrast to Spanish, there was variability early on in the syncope of a labial before /l/. In some words, syncope appears invariably to have occurred, e.g. *falar* 'speak', *estabro* 'stable' (STABULU). In other cases, forms with and without syncope are attested early on, e.g. *pobro/póboo* 'people'*, -abre/-áve* (-ABILE)*, diabro/diáboo* 'devil' (DIABOLO).

[79] The term conspiracy was first applied to sound change by Jakobson (1929), which conceived of certain tactical or strategic reactions triggered by some phonological event, which could channel the evolution of a language in a particular direction.

Some of this variation may be due to late borrowing from Latin (so called learned forms or semicultisms), or to borrowing from another Peninsular variety or dialect mixture (e.g. _diabro/diáboo_). However, obviously unlearned forms like _póvoo/pobro_ 'people, village' are much more difficult to explain (see Harris 1990 for critique of such heavyhanded use of the term learned). The traditional historical literature has either ignored or failed to recognize this fact. For instance, Williams' (1939: 66) only comment about _póvoo_ is in regard to the irregular development (/p/ > /v/) seen in this word and several others, e.g. NEPETA > _néveda_ 'catnip'.

In regard to the orthography of these labials, consider the following variants occurring and not occurring in Old Portuguese. Forms that actually occur in Old Portuguese are in bold.

(82) Syncopated versus unsyncopated obstruent + /l/ in OP

pVl	COPULA	**_cobra_**/_*covra_	_*cóboa/*cóvoa_
	POPULU	**_pobro_**/_*povra_	**_póboo/póvoo_**
bVl	-ABILE(S)	**_-abre(s)_**	_*-ábel/_**_-ável_** (PL _–áveis)_
	-IBILE(S)	**_-ibre(s)_**	_*íbel/_**_-ível_** (PL _–íveis)_
	DĒBILE	_*deble/*debre_	**_débil_**/_*dévil_
	DIABOLU	**_diabro_**/_*diavro_	**_diáboo_**/_*diávoo_
	NEBULA	**_nebla_**/_*nevra_	_*néboa/_**_névoa_**[80]
	MOBILE	_*moble/*mobre_	_*móbel/_**_móvel_**
	NŌBILE[81]	**_noble/nobre_**	_*nóbel/*nóvel_
	PARABOLA	**_paravra/palavra_**	**_paráboa/parávoa_**
	SABULU	**_sa(i)bro_**/_*sa(i)vro_	_*sáboo/*sávoo_
	TABULA	**_tabla/tavra_**	**_táboa/távoa_**

[80] According to DELP, _nevoa_ is attested in 13th century, and _nebla_ occurs in the 14th century Galician version of the _General Estoria_.
[81] DCE considers learned the Spanish outcome of this word, attested as early as the 12th century; DEC considrs semi-learned the 13th century Catalan form. Likewise 13th Portuguese possessed the form _nobre_, but also _noble_, both attested in the 13th century, cf. the variation for _robre/roble_, attributed from Spanish borrowing, and apparently a form _diabro_ for native _diabo(o)._

The normal reflexes of Latin /p/ and /b/ in intervocalic contexts were /b/ and /v/ respectively. If one uses this to measure whether a form is learned, of the variants given second, the following stand out. For /p/: *póvoo*. For /b/: *débil, paráboa, táboa.* Cases with the labial preceding a liquid are more difficult to interpret, since Latin word-medial /pl/ and /bl/ were very infrequent in monomorphemic words. Except for two cases of /vr/ *(tavra* and *palavra)*, the majority of variants given first have /br/, but a few have /bl/ (*nebla, noble, tabla*). None, however, has /vl/[82].

Williams (1939: 78) argues that all cases of pretonic /b(V)l/ become /l/ in Portuguese. Since this /l/ is not deleted like simple intervocalic /l/, this development was either posterior to such deletion, or /b/ fully assimilated to produce geminate /ll/, which simplified along with the original geminate to /l/. Indeed, this development is observable in *falar* 'speak' (FABULĀRE), and *taleira* 'table' (TABULĀRIA). In addition, Williams cites some compounded preposition/adverb + pronoun forms, e.g. SU(B) ÍLLU > *solo* 'beneath it/him', UBI ÍLLU > *ullo* 'where him/it'[83]. Leonese shows a similar development, affecting not only /b/ but /p/ as well, i.e. *pl/bl > l*, cf. POPULU > *puelo*, FĀBULĀRE > *falar* (Menéndez Pidal, 1980). In addition to never deleting original /p/, Portuguese shows more resistance to syncope in the environment labial + /l/.

In cases where Portuguese /br/ corresponds to either primary or secondary /bl/, Williams invokes borrowing or learned influence, e.g. OBLIGĀRE > *obrigar* 'obligate', DIABOLO > *diabro* 'devil'. To my knowledge, it is not possible to corroborate or disprove

[82] OP *palavra/palaura* seems to have been the most common form, but *palavoa* is attested between the 13th and 15th centuries (DELP). Williams believes the modern form *palavra* to be borrowed from Spanish, and indeed the attestation of another form *paravla* (13th century, DELP) may suggest that the modern form of this word was borrowed from Spanish, which had an identical form originally. The extension of this word with the meaning 'word' throughout all of Romance instantiates a common origin, whereas the verb *parabolare* 'speak' is not found in Spanish or Portuguese. Furthermore, the development of noun and verb is not parallel in some languages (cf. Catalan *parola* ~ *parlar*).
[83] I am unaware of any such forms elsewhere in Romance.

this hypothesis. DELP refers to an apparent occurrence of *diabro* in the fifteenth century manuscript of *Crónica da Ordem dos Frades Menores*. In addition, many sources cite the word *estabro* as Old Portuguese. If the borrowing account is given any credence, this evidence speaks in favor of very early borrowing.

4.2.2.2. **C_2 is a nasal**

As Table 3 illustrates, there are no cases of syncope of a labial obstruent before nasal in Spanish or Portuguese, e.g. JUVENE > *joven/jóvem* 'young', COPHINU[84] > *cúevano* 'basket'[85]. However, both Spanish and Portuguese allow syncope of a labial before /r/ (e.g. LIBERE > *libre/livre*) and to some extent before /l/ (e.g. FABULARE > *fablar/falar*). This suggests that syncope may have been more favored when a non-nasal followed the labial. Otherwise stated, the systematic absence of syncope after /v/ in Spanish (e.g. *joven, cúevano*) suggests that /bn/ or /vn/ was not wellformed. Recall, however, that syncope may have occurred in the context /pVn/, i.e. *Ramnate* (GC *Rapinatī*, placename[86]. This evidence, once again, suggests that syncope after /p/ was more favored than after /b/ ~ /v/.

When /m/ is followed by /n/, syncope occurs only in Spanish, e.g. (H)OMINE > OS *omne/hombre,* OP *homen* 'man'. The fact that syncope after /m/, like syncope after /b/,

[84] EL COPHÍNU (e.g. OO/Of cofin 'coffin').
[85] Note the Spanish form *cúevano* shows a change of the unstressed vowel /e/ of expected **cuéveno* to /a/ (cf. CAMERA > S/P *cámara* 'chamber'). Such variation in posttonic vowels is not uncommon in Old Spanish, cf *hámago* (AMIDU 'starch').
[86] Although the development of/ pn/ > /mn/ is not uncommon crosslinguistically (cf. PIE *sopnos > L *somnus* 'dream'), it is not clear how much weight sould be given to this single form.

did occur before the other non-nasal sonorants (e.g. CUMULU > S *colmo,* P *combro* ‘top) suggests that phonotactic and perhaps syllabic constraints play an important role in syncope. The resistance of Portuguese to the sequence /mn/ is another funadamental difference between these two languages. Before further discussion of this topic, it is necessary to examine the development of the sonorants /n/ and /l/ in Portuguese.

4.2.2.2 **Sonorant Deletion in OP**

Portuguese is the only Hispano-Romance language to delete intervocalic /n/ and /l/. Williams (1939) dates this process to the tenth or eleventh century. If this date is accurate, then it seems that syncope had not yet occurred around the tenth or eleventh centuries in the context /mVn/ (cf. /bVn/ and /bVl/ below), since had syncope occurred, sonorant (no longer in intervocalic position) would have no longer have been subject to deletion, e.g. OP ***omne*. In contrast, Spanish shows syncope between two nasals from its origins (e.g. HOMINE > *omne* ‘man’), although this sequence eventually dissimilated (i.e. *om(b)re*).

The interaction of syncope and sonorant deletion (SD) in Old Portuguese is examined in Table 4. Pretonic forms are given first, and posttonic forms second, when attested. Hypothetical yet unattested forms are indicated by two asterisks (i.e. **).

Table 74 **The interaction of syncope and sonorant deletion in OP**

		NO SYNC (SD >> SYNC)	SYNC (SYNC >> SD)	
pV(l)	POPULU	*póboo*	*pobro*	‘poor’

pV(n)	GC *Rapinatī*	*revinhade*	***Ra(b)nade*	(place name)
bV(n)	JUVENES	*jovens*	***jo(v)nes*	'young'
bV(l)	FĀBULĀRE	***favoar*	*falar*	'speak'
	DIABOLU	*diáboo*	*diabro*	'devil'
	NEBULA	*névoa*	*nebla*[87]	'mist'
	STABULU	***estáboo*	*estabro*/G *estrabo*	'stable'
fV(l)	SĪFILĀRE	***siv(i)ar*	*silvar*	'whisle'
	*TRIFOLU[88]	*trév(o)o*	***treblo*	'clover'
mV(n)	SĒMINĀRE	*semear*	***semnar*	'spread'
	FĒMINA	*fêmea*	***femna*	'woman'
mV(l)	SIMILĀRE	***semear*	*sembrar*	'seem'
	CUMULU	***cômoo*	*combro*	'peak'

Note that sonorant deletion always bled syncope before a nasal, again suggesting that syncope before a nasal was highly disfavored. As we have seen, syncope of an obstruent plus /l/ was variable. This finding is very significant, since it demonstrates that, up to the 11th century when sonorant deletion occurred (Williams, 1938), syncope had not yet taken place or was still variable in such contexts. Both of these facts suggest a constraint against consonant + nasal sequences in Old Portuguese, i.e. *CN.

Sometimes even original /br/ sequences were sometimes broken up by epenthesis of /e/ in Old Portuguese.

(83) Epenthesis in original /br/ sequences

FIBRA	*fêvera* (13th c.)	~	*fevra*	'fiber'
FEBRUARIU	*fevereiro* (13th c.)	~	OG *febreyro*	'February'

[87] According to DELP, *nevoa* attested in 13th century, and *nebla* occurs in the 14th century Galician version of the *General Estoria*.
[88] Ibero-Romace (and Fr) forms said by DCE to go back to *trifulum*, contaminated by Greek *triphyllon*.

This development did not affect certain dialects like Old Galician. Recall the variation seen in *névoa* and *nebla*, in which the latter form with /bl/ also was Galician. This suggests that the variable syncope of labial + /l/ may have been dialectal as well, but this hypothesis needs more investigation. In both Spanish and Portuguese, syncope of /mVl/ and /mVr/ yielded /mbl/ (> OP /mbr/) and /mbr/ respectively, e.g. *semblar* (SIMILĀRE 'seem') and *(re)lembrar* (MEMORĀRE 'remember')

Recall that obstruent + liquid sequences were limited to obstruent + /r/ in early Portuguese, e.g. /pr/, /br/ and /vr/[89]. Original /bl/ also developed to /br/ (though Williams considers this developement "semilearned"). This implies that both word-medial /pl/ and /bl/ constituted gaps in the system after these changes. Recall that /pl/ and /bl/ were altered word-initially also, i.e. /pl/ > /tʃ/, /bl/ > /l/. Unlike Spanish, however, where only the word-initial changes occurred, by the stages of early Portuguese, /pl/ and /bl/ were no longer possible sequences.

4.2.3. **Other sources of unsyncopated forms**

Many learned forms failed to undergo syncope in both Spanish and Portuguese. These forms are examoned in Table 5 below.

Table 75 **Absence of syncope in learned forms**

pVk	HYDROPICU	*trópico*	*trôpego*	'dropsical'
pVd	*INSAPIDU[90]	*enxábido*	*enxábido*	'tasteless'

[89] In learned words, Latin /ppl/ developed to /pl/ and eventually /pr/, e.g. SUPPLICĀRE > *supricar* 'supplicate'.

[90] Cf. JS *xabdo.*

bVt	SUBITU	*súpito*	*súpito*	'sudden(ly)'
bVk	*IBICIŌNE	*ibizone*	*(e)iviçom*	'ibex'
bVg	NAVIGĀRE	*navegar*	*navegar*	'sail'
mVk	HOMICĪDIU LL PŌMICE	*omezillo* *pómez*	*omezio/omizio* *pomes*	'homicide' 'pumice'
mVd	LL AMIDU	*a(l)midón*	*amidom*	'starch'
mVg	*FŪMIGĀRE	*humigar*	*fumigar*	'smoke'

In the future and conditional tense forms of the following verbs, syncope either failed to occur or analogical restoration took place, presumably on the model of the infinitive (i.e. *saber, aver, bivir/viver*). In Old Spanish, many of these verbs were variable, occurring either in full or shortened forms. If syncope took place early on in Portuguese, no traces remain to my knowledge.

Table 76 **Nonoccurrence of expected complex onset due to analogy**

pVr	*SAPERAT	*sab(e)rá*	*saberá*	'know-3SG.FUT
bVr	*HABERAT *VIVERAT	*av(e)rá* *biv(i)rá*	*averá* *viverá*	'have-3SG.FUT' 'live-3SG.FUT'
mVr	*COME(D)ERÁT	*comerá/* *ombrá*	*comerá*	'eat-3SG.FUT'

4.2.4. **The interaction of voiced obstruent deletion and syncope**

In both Spanish and Portuguese, the voiced stops /d/ and /g/ deleted when intervocalic. This process will be referred to as voiced obstruent deletion. It is possible to draw some important conclusions about the chronology of syncope in these contexts. Because there are very few examples of VOD of /g/, the analysis below takes into account only forms containing /d/.

Table 77 **The interaction of deletion and syncope**

p_(d)	LL CUPIDITIA	*cobdiçia*	*cobiiça*	'greed'
	LAPIDE	*labde*		'(grave)stone'
	TEPIDU	*tibio*	*tibo*	'warm'
f_(d)	BIFIDU?	*be(l)fo*	*(belfo)*	'with protruding lip'
m_(d)	LL AMIDU	*háma(g)o*	*áme(g)o*	'starch'
	QUŌ-MODŌ	*como*	*como*	'how'
m_(g)	FŪMIGĀRE	*fumear*	*fumear*	'fumigate'

Spanish shows syncope leading to /bd/ in both pretonic and posttonic contexts, e.g. *cobdicia*, *labde*. In light of these results, the lack of syncope in *tibio* is unexpected. However, this –IDU adjective may have been subject to analogy.

Overall, two patterns are observed. Type 1: syncope (SYN) preceded voiced obstruent deletion (VOD) in Spanish (i.e. SYNC >> VOD). Type 2: voiced obstruent deletion bled any potential syncope in Portuguese, (i.e. VOD >> SYNC). In some cases, however, voiced obstruent deletion occurred earlier than syncope (Type 2) in both languages (i.e. VOD >> SYNC), e.g. *como*.

(84) Two chronological patterns

Type 1	SYNC >> VOD	
CUPIDITIA	*cobdicia*	'greed'
BIFIDU	*be(l)fo*	'with protruding lip'

Type 2 VOD >> SYNC

CUPIDITIA		*cobiiça*	'greed'
LL AMIDU	*háma(g)o*	*áme(g)o*	'starch'

The patterning of the data above suggests that syncope between labials and /d/ affected obstruents (e.g. /p/ and /f/) earlier than nasals (e.g. /m/). After the nasal /m/, the tendency in both languages was for deletion to bleed syncope (i.e. VOD >> SYNC), e.g. *háma(g)o*/*áme(g)o.* The symmetry observed for Portuguese (i.e. always VOD >> SYNC) suggests either that VOD was more entrenched early on in Portuguese, or that syncope after labials did not occur before /d/ in Portuguese. Recall, however, that syncope probably occurred before /t/ (e.g. /pVt/ and /mVt/, and possibly /bVt/). In § 4.2.6, it is suggested that these syncope patterns were most likely the original state of affairs in Proto-Hispano-Romance.

4.2.5. **The interaction of syncope and apocope**

Recall that apocope occurrred after the sonorants and sibilants early on in Hispano-Romance, e.g. SALE > S/P *sal* 'salt'. Words of more than two syllables *a priori* could undergo syncope, apocope, or both. For example, JUVENE 'young' could have any of the following possible outputs in Spanish: ***joven, **jovne, **jovn.* In reality, however, apocope could occur only after a simple coda, particularly a sonorant or /s/. Thus such a form as ***jovne* could not undergo apocope, yielding ***jovn*. This interaction of syncope and apocope has some very important implications for the study of comparative Hispano-Romance phonology.

In this chapter, we have seen which environments with a labial C_1 were subject to syncope in Spanish and Portuguese. Table 78 lists some of the forms already seen in Section 4.2 whose inputs meet the structural requirements for both apocope and syncope.

Table 78 **The interaction of syncope and apocope**

pVd(e)	LAPIDE	*labde/laude*		'(grave)stone'
pVr(e)	LEPORE	*liebre*	*lebre*	'hare'
	PIPER(E)	*pebre*		'pepper'
bVn(e)	JUVENE	*jóven*	*jóvem*	'young'
bVl(e)	-ABILE	-*able*	*-ável*	(suffix)
	MOBILE	*mueble*	*móvel*	'mobile'
bVr(e)	*RŌBOR(E)	*roble*	*robre*	'oak'
	ŪBER(E)	*ubre*	*ubre*	'tit'
mVn(e)	(H)OMINE	*(h)omne >(h)ombre*	*(h)omem*	'man'

The data above illustrate three patterns. In Type 1 environments, syncope preceded apocope in both languages, e.g. /pVr(e)/ and /bVr(e)/. In Type 2 environments, apocope occurred, and syncope did not in both languages, e.g. /bVne/. In Type 3 environments, syncope was earlier than apocope in Spanish, and later than apocope in Portuguese, e.g. /bVle/, /mVne/.

(85) Three chronological patterns

Type 1		SYNC >> APOC	SYNC >> APOC	
pVr(e)	LEPORE	*liebre*	*lebre*	'hare'
bVr(e)	*RŌBOR(E)	*roble*	*robre*	'oak'
	ŪBER(E)	*ubre*	*ubre*	'tit'

Type 2		APOC >> SYN	APOC >> SYN	
bVn(e)	JUVENE	*jóven*	*jóvem*	‘young’
Type 3		SYNC >> APOC	APOC >> SYN	
bVl(e)	-ABILE MOBILE	*-able* *mueble*	*-ável* *móvel*	suffix ‘mobile’
mVn(e)	(H)OMINE	*(h)omne >(h)ombre*	*(h)omem*	‘man

Although the relative ranking APOC >> SYN is posited for Type 2 here, it is not clear if syncope failed to occur due to the earlier application of apocope or to the influence of phonotactic constraints on the ouput (e.g. *bn). Recall that both /bn/ and /fn/ were apparently unacceptable syncope outputs in Spanish (e.g. COPHINU > *cuévano* ‘basket’). As discussed in § 4.2.2.2, however, /mn/ (e.g. NOMINĀRE > *nomnar/nombrar* ‘name’) was wellformed. It is not clear why /mn/ was better formed than /bn/ or /fn/. Both sequences are labial + nasal. The failure of syncope in *jóven*, which was subject to interaction with apocope, is like *cuévano*, never subject to apocope. Although it is clear that at the time of apocope here, syncope had not yet taken place, *cuévano*[91] seems to suggest that even if apocope had not affected *jóven*, syncope would not have taken place.

It is possible to reconstruct the original proto-Hispano-Romance sources for the Spanish and Portuguese sequences examined in this section. In (6) below, note that the application of syncope or apocope in a particular environment is indicated by parenthesis (i.e. /m(V)le/ or /mVn(e)/, etc.). Hispano-Romance reconstructions are given to the right of each context.

(86) Syncope and apocope in common Hispano-Romance

[91] The vowel change here, i.e. *cuéveno* > *cuévano*, may be interpreted as preventing future syncope, since /a/ does not delete in Spanish. However, it is not possible to prove causality here.

Proto-Hispano-Romance		Old Spanish	Old Portuguese
bVn(e)#	*bVne	vVn	vV(N)
mVn(e)#	*mVn	mne/mbre (**mVn)	mV(N)
m(V)le#	*mble	mble	mbre
m(V)re#	*mbre	mbre	mbre

When syncope preceded apocope, producing a consonant sequence followed by /e/, apocope could not occur, since word-final sequences were not wellformed, e.g. /mble/ and /mbre/ (S *-able*). In the case of /mVne/, syncope came to occur in Spanish (e.g. HOMINE > *homne/hombre*), blocking any potential apocope (***homn*).

In contrast to Spanish, Portuguese resists syncope in /bVn/ (Type 2) as well as /mVn/ (Type 3), e.g. *jovem, homem*. Consequently, both of these forms were subject to apocope. The foregoing discussion of apocope has maintained that this process applied in both Spanish and Portuguese after a sonorant or anterior sibilant. However, the fact that syncope rather than apocope applied in Spanish forms like *omne/ombre* is problematic, since the Portuguese form *homen* clearly suggests that syncope in the context /mVn/ could not have taken place in common Hispano-Romance.

In (6), syncope leading to /mn/ occurred earlier than apocope in the history of Spanish, while syncope never occurred in Portuguese. The disadvantages of this account are that the nearly identical contexts of apocope are attributed to coincidence. However, it is said that pre-eleventh century Spanish normally retained word-final /e/, e.g. *pane*, although there was an incipient tendency toward loss after certain consonants, e.g. *carral* (Lapesa 1951: 188; Lloyd 1987: 337-38). If this is the case, then it appears that the similar conditioning of apocope in both these languages is either the result of independent innovation or inherited variation. Assuming that apocope was a Hispano-Romance tendency after sonorants or sibilants allows us to treat the different treatment of /mVn/ as a case of interaction of two variable tendencies (i.e. Spanish syncope of /mVn/ and postsonorant apocope).

Another "bruteforce" way around this chronological problem is to assume that apocope was an independent innovation rather than a shared development in both Spanish and Portuguese.

(87) Independent-innovation account of apocope

Proto-Hispano-Romance		Old Spanish	Old Portuguese
bVn#	*bVne	vVn(e)	vV(N)(e)
mVne#	*mVne	mne/mbre	mV(N)(e)
m(V)le#	*mble	mbre	mbre
m(V)re#	*mbre	mbre	mbre

This account, however, attributes too many of the parallelisms between Spanish and Portuguese apocope and syncope to chance, and is disfavorable.

4.2.6. Syncope after labial: summary

The evidence seen so far in this chapter allows us to reconstruct a relative chronology of syncope after a labial consonant. In Table 9, syncope is indicated by the use of parenthesis (e.g. p(V)t) and the lack thereof by just V (e.g. bVn). Furthermore, the time dimension is represented on the vertical axis, that is, later syncopes (e.g. b(V)t) occur lower down than earlier ones (e.g. p(V)t).

Table 79 **Relative chronology of syncope after labials**

Proto-Romance	p(V)t			
Proto-Hispano-Romance	b(V)d pVd pVn	b(V)t bVn	fVk fVd fVn	m(V)t mVd mVn m(V)l m(V)r
Proto-Portuguese	pV(d) pV(n)	bV(n)	fV(n)	mV(d) mV(n)
Proto-Spanish	p(V)d p(V)n		f(V)k f(V)d fVn	mV(d) m(V)n

4.3. Syncope after a coronal consonant

In this section syncope after a coronal consonant is surveyed. Because coronal consonants occur in more environments than labials and dorsals (e.g. syllable coda), coronal place is often considered unmarked. Such markedness considerations might suggest that syncope after a coronal should be more common than after other places like labial or dorsal, given that such syncopes often lead to coronal codas. Whether coronals were more likely to undergo syncope than labials or dorsals is investigated in this section.

Syncope often occurred after a coronal in both Spanish and Portuguese, creating a CC sequence at the deletion site. Examine the following forms in Table 10, paying careful attention to whether the resulting CC sequence is tautosyllabic (e.g. /tr/, /dr/, etc.) or heterosyllabic (e.g. /tt, /st/ etc.).

Table 80 **Syncope after Coronal**[92]

a. Pretonic syncope

tVt	MĀTUTĪNU	*matino*		'morning'
tVl	ROTULĀRE	*arrojar*		'hurl'
tVr	LATERĀLE	*ladral*	TM *ladral*	'sideboard of cart'
	REITERĀRE	*redrar*	*redrar*	'hoe again'
sVt	LL APPOSITICIU	*(a)postizo*	*postiço*	'false'
	*CO(N)SUĒTŪMINE	*costumne*	*costume*	'custom'
	CŌ(N)SŪTŪRA	*costura/cordura*	*costura*	'sewing'
	*MA(N)SUĒTĪNU	*mastín*		'mastif
sVk	RASICĀRE	*rascar*	*rascar*	'scratch'
	RESECĀRE	*resgar*	*rasgar*	'rip'
sVn	GC *Sisenandu*	*Sesnando*		(place name)
sVl	FŪSĪLĀRIA	*fuslera*		'type of brass'
nVp	MANŪ-PARĀRE	*mamparar*	*mamparar*	'maintain'
nVt	BONITĀTE	*bondad*	*bondade*	'goodness'
	REPAENITĒRE	*arrepender*	*arrepender*	'repent'
nVk	COMMŪNICĀRE	*comulgar*	*comungar*	'commune'
nVf	* BENE-FACTORIA	*ben(e)fetría*	*bemfeitoria*	'good-doing'
nVm	*MINIMĀRE	*mermar*		'lessen'
nVr	HONORĀRE	*onrrar*	*onrrar*	'honor'
	*TENERĀRIU	*ternero*	*ten(r)reyro*	'cow'
	*PŌNERÁIO	*porné/porré*	*porrei*	'put-1SG.FUT
lVt	ANHELITĀRE	*alentar/alendar*		'breathe'
	-LITĀTE	*-ldad*	*-ldade*	(suffix)
	MOLITŪRA	*moldura*		'triturate'
	SŌLITĀRIU?[93]	*soltero*	*solteiro*	'unmarried'

[92] Disputed etymologies:

tm	MARITIMU	*marisma*	'coast(al)'
	LŪRIDU	*lerdo*	'dirty'
rl	*BŪRULA	*burla*	'joke'
	PĒRULA/PERNULA	*perla*	'pearl'

	TOLETANŌS	*Toldanos*		(place name)
lVk	ALICŪNU	*algún*	*algum*	'some'
	DELICĀTU	*delgado*	*delgado*	'fine, thin'
	*SALICĀRIU/-A	*salguera*	*salgueiro*	'willow'
	*SALICĀRE	*salgar*	*salgar*	'salt'
	*SALICĒTA		*Salzeda(s)*	(place name)
lVb	OLIVĀRIA		*olveira*	'olive tree'
lVd	CALIDĀRIU/-A	*caldera*	*caldeiro*	'pot'
	(H)UMILITĀTE	*humildad*	*humildade*	'humility'
lVf	*MALE-FATIU	*malvazo*		'bad, evil'
lVs	ELISONTIE	*Elsonza/Eslonza*		(place name)
lVr	*VALĒRÁT	*valdrá*	*valrá*	'will be worth'
lVm	ELEĒMOSYNA[94]	*limosna*	*esmol(n)a*	'alms'
	MELIMĒLU	*membrillo*	*marmelo*	'type of apple'
lVn	BAL(I)NEĀRE	*bañar*	*banhar*	'bathe'
	*MOLĪNĀRE	*mulnar*		'mill'
	MOLĪNĀRIU		*mol(n)eiro*	'miller'
rVt	VĒRITĀTE	*verdad*	*verdade*	'truth'
	HERE(D)ITĀTE[95]	*heredad/herdidad*	*herdade*	'inheritance'
rVk	*MAURICELLU	*morziello*	*murzelo*	'dark horse'
	AMĀRICĀRE	*amargar*	*amargar*	'embitter'
	*AUCTŌRICĀRE	*otorgar*	*outorgar*	'grant'
	*MATŪRICĀRE	*madurgar*	*madurgar*	'rise at dawn'
	VĒRECUNDIA	*verguença*	*vergonça*	'shame'
rVb	CEREVĒSIA	*cerveza*	*cerveja*	'beer'
	GC *hariberc*	*albergue*	*albergue*	'lodge, hostel'
rVg	ĒRIGERE	*erguir*	*erguer*	'erect'

[93] See DCE for arguments against SŌLITĀRIU > *soltero/ solteiro* 'single'; the author convincingly shows that *soltar/suelto* 'loos(en)' (remade and not continuing CL *solūtus*) is the correct source of the adjective. S *soledad* makes its appearance in the early 14th century.

[94] Perhaps the development was something like *elemosna* > *elmosna* > *esmolna* > *esmolla* > *esmola* (DELP).

[95] After this form deletes /d/, syncope in /rVt/ is possible. According to DCE, *herdidad* appears in Berceo, and according to PENSADO-RUÍZ (1984)/Pensado-Ruiz, *herdad* appears in Cid, though I could only find one case of *herdad* (Alphonsine) and none of *herdidad*.

rVf	LL SCARIFĀRE	*escarbar*	*escarvar*	‘scrape off mud’
rVm	ERĒMĪTA	*hermida*	*ermida*	‘hermitage’
rVn	ARĒNĀTU VERONĪCE	 *verniz/barniz*	*arnado*[96] 	‘sandy place’ ‘varnish’
rVl	*ŌRULĀRE	*orlar*	*orlar*	‘border’
rVr	*FERĪRÁT *QUERERÁT	*ferrá* *querrá*	*ferrá* *querrá*	‘will wound’ ‘will want’

b. Posttonic syncope

tVl	ANĒT(H)ULU SITULA VETULU	*eneldo* *viejo*	*aẽdro/endro* *selha* *velho*	‘dill’ ‘bucket’ ‘old’
tVr	VETERE	*viedro*	*vedro*	‘old’
dVr	HEDERA ISIDORU	*yedra* *Isidro*	*era*? 	‘ivy’ (name)
sVt	POS(I)TU	*puesto*	*posto*	‘put-PART’
sVk	*ĪSICE		*irze*	‘salmon’
sVm	QUADRĀGĒSIMA	*cuaresma*	*quar(a)esma*	‘fortieth’
sVn	ASINU ELEĒMOSYNA	*asno* *el(i)mosna/ limosna*	*asno* *esmol(n)a*	‘mule’ ‘alms’
(n)sVl	I(N)SULA	*isla*	*ilha*	‘island’
nVt	*EXTRONITU	*estruendo*	*estrondo*	‘din’
nVk	(DIE) DOMINICU GC *Fanica* MANICA	*domingo* *manga*	*domingo* *Fánega/Fanga* *manga*	‘Sunday’ (place) ‘sleeve’
nVm	ANIMA	*alma*	*alma*	‘soul’
nVr	GENERU	*yerno*	*genro*	‘son-in-law’

[96] The NP word *areado* is from *arear* ‘clean with sand’ (Aurelio, 1999).

	TENERU	*tierno*	*ten(r)ro*	'tender'
lVp	COLEP(H)U	*golpe*	*golpe/colbe*	'blow'
	POLYPU	*pulpo*	*polvo*/G *polbo*	'octopus'
lVt	ANHELITU	*aneldo/eneldo*		'breath'
	*SOL(I)TU	*suelto*	*solto*	'loose'
	*VOL(I)TU	*vuelto*	*volto*	'returned'
lVk	CALICE	*cal(i)ze/calçe/ ca(l)z*		'chalice, canal'
	SALICE	*salce/salze/ sauze*		'willow'
	ŪLICE		*urze*	(plant)
	FAMĒLICU	*jamelgo*	G *famèlgo*	'hungry'
	*MELICA	*mielga*	*melga*	'alfalfa'
	*PŪLICA	*pulga*	*pulga*	'flea'
lVd	CAL(I)DU	*caldo*	*caldo*	'hot'
	SOL(I)DU	*soldo*	*soldo*	'coin'
lVn	BAL(I)NEU	*baño*	*banho*	'bath'
lVl	PILULA	*pella*	*pela*	'pill'
rVt	*OFFER(I)TA[97]	*oferta/oferda*	*oferta*	'offering'
	*REFER(I)TA	*refierta/rehierta*	*referta*	'quarrel'
rVk	SŌRICE	*sorce*		'mouse'
	AMĀRICU	*amargo*	*amargo*	'bitter'
rVd	LĀR(I)DU	*lardo*	*lardo*	'bacon'
	VIR(I)DE	*verde*	*verde*	'green'
rVg	ĒRIGIT	*yergue*	*ergue*	'erect-3SG'
rVm	LL ERĒMU	*yermo*	*ermo*	'wasteland'
rVl	MERULU	*mierlo*	*merlo/melro*	'blackbird'
	*ŌRULA	*orla*	*orla*	'border'

[97] According to DCE, deverbal of *REFERITĀRE, frequentative of REFERRE 'carry back'. REW prefers REFERTUS 'stuffed'; DCE provides examples of the Old Spanish verb *refertar* with a meaning close to that of 'throwing back in someone's face'. However, there is simply no reason for rejecting a *REFERTĀRE on the basis of there being no attested direct descendants of a past participle *REFERTUS. There is plenty of evidence for related strong participles like *SUFFERTU 'suffer' (e.g. OC *sofert*, OS *sufierto*), and even other derived frequentatives like *SUFFERTĀRE (e.g. Cat *sofertar*) cited by Corominas himself.

rVr	CEL **beruro-*	*berro*		(plant)

Except for the case of the geminate /tVt/, all of the forms in table 9 and 10 unndergoing syncope either contain a sonorant C_1 or a following liquid (i.e. are cases of obstruent + liquid). The details of these developments in these contexts are discussed below in § 4.3.1-§ 4.3.5.

Table 11 presents forms which syncoped only in Spanish. The syllabification of the output sequence in Old Spanish (either obstruent or sonorant) was always heterosyllabic.

Table 81 **Syncope after Coronal**

a. Pretonic syncope

tVk	*VĪTICACEA	*visgaza/virgaza*		(plant)
tVb	NATĪVITĀTE[98]	*na(d)vidad*	(*na(d)vidade*)	'birth'
tVn	LL CATĒNĀTU	*candado/cannado*	*cadeado*	'(pad)lock'
dVk	JUDICĀRE	*judgar/juzgar*	*juigar*	'judge'
dVg	GC *Theodegundia*	*Tedguenza*		(place name)
dVs	GC *Adosinda*	*Adsenda*		(place name)
dVm	GC *Radimiru*	*Ra(d)miro*		(name)
	REDIMERE	*rendir/remir*	*rem(i)ir*	'redeem'
dVn	GC *Fridenandu*[99]	*Fre(d)nando*	*(Fernando)*	(name)

b. Posttonic syncope

[98] This form is late to appear in Portuguese and probably borrowed from Spanish.
[99] It is not clear if metathesis occurred prior to syncope, i.e. *Ferdinandu* is also attested.

tVk	-ĀTICU	*-adgo/-azgo*	*-ádigo* (*-algo*)	(suffix)
	LL NATICA	*nadga* (*nalga*)	*nádiga* (*nalga*)	‘buttocks’
tVl	CAPITULU[100]	*cabildo*	*cabídoo*	‘chapter’
	ROTULU	*rolde*		‘crowd’
	SPATULA[101]	*espalda*	*espádua*	‘back/shoulder’
	TITULU	*tilde*	*til*	‘tilde’
tVm	LĒ(G)ITIMU	*lindo*	*l(e)ídimo*	‘pretty’
tVn	*RETINAS	*rienda*	*rédeas*	‘reigns’
	SĒRŌTINU	*serondo*	*serôdeo*	‘eve
dVk	DUODECIM	*do(d)ze*	*doze*	‘twelve’
	TRĒDECIM	*tre(d)ze*	*treze*	‘thirteen’
	PEDICU	*piezgo*		‘leg (furniture)’
dVl	NŌDULA[102]		*nódoa*	‘blot’

For certain reasons, the forms in Table 12 failed to undergo syncope in Spanish and Portuguese.

Table 82 **Syncope after Coronal**

a. Pretonic syncope

tVm	AUTUMĀRE	*tomar*	*tomar*	‘take’

[100] Attested as CAPICLUM in AP. Comparative evidence (e.g. Gasc *cabelh*, etc.) support normal development of a syncopated CAPITULU ‘little head,’ which did not survive in all areas. The picture is even more interesting when we examine Old Portuguese, which, aside *cabídoo* (13th to 15th centuries), had *capítollo* (15th century) and *cabídolo* (16th century), and Spanish with metathesis of */dl/.

[101] Apparent diminutive of SPAT(H)A ‘a broad, flat, wooden instrument for stirring any liquids, broadsword, batten’, SPAT(H)ULA has the meaning ‘broad piece (e.g. leg of meat) in Apicius (2nd century CE). All older Romance reflexes of this form have the meaning ‘shoulder-blade’, which seems compatible with the above meaning. DCE is in favor of departing from an apparently later Latin unsyncopated form SPATULA and not *SPATLA/SPACLA, which would have given Romance reflexes agreeing with those of *VETLU/VECLU. Whereas DCE suggests that *rolde/tilde* is from Catalan (or Occitan), he treats Sp *espalda* (14th century), with exactly the same development, as native, though presumably from Late Latin. This leads one to question whether a borrowing account is even necessary. Portuguese has both *espalda* (15th century) and *espadua* (12 century), though the latter is earlier.

[102] This form lacks obstruent deletion in Portuguese, suggesting possible learned entrance, cf. NŌDU > P *nó*.

b. Posttonic syncope

tVb	LL DATIVA	*dádiva/dávida*	*dádiva*	'gift'
(n)sVr	A(N)SERE[103]	*ánsar*	*ánsar*	'wild duck'

As Tables (81-83) illustrate, the vast majority of cases of syncope above occur after a coronal sonorant or /s/ (i.e. C_1). Other than /s/, Portuguese disallows coronal obstruents in coda (e.g. *l(e)ídimo, nádiga, **l(e)idma, **nadga*). In the earliest observable stages of syncope in Latin, liquids (particularly /l/) seemed to favor syncope, e.g. CAL(I)DU, BAL(I)NEU, etc. Early on in the Classical language, however, the participle POS(I)TU was also variable. All of Romance has syncope to some extent in these contexts. Because these early cases of syncope also seem to suggest that a coronal C_2 may also have favored syncope, this chapter pays particular attention to the place as well as manner of C_2.

4.3.2. Syncope between a coronal and obstruent

4.3.2.2. C_2 is a coronal obstruent

Below, in our discussion of the interaction of syncope and obstruent deletion, it becomes clearer that when C_1 was a liquid, the fact that the deletion of a following originally intervocalic /d/ and /g/ was bled by syncope demonstrates that syncope in these contexts was very early. Portuguese more faithfully maintains this initial state of affairs, i.e after sonorants and /s/ syncope (and as we see in our discussion of dorsals, after /ts/ or /dz/ as well).

[103] DCE points out that, the /ns/ here is due not to learnedness but to contaminion by Germanic *ganso*. Both reflexes of this word are also present in the oldest texts.

Recall that consonant voicing is another good indicator of the chronology of syncope. In our discussion of labials, an obstruent C_2 (except in the case of /pt/) always voiced after labial obstruent or sonorant, e.g. CUBITU > *cobd̲o* (***cobto*), SEMITA > *send̲a* (***senta*), etc. In the same vein, when syncope occurs after a coronal, an obstruent C_2 is often voiced, e.g. ANHĒLITU > OS *aneldo*, DELICĀTU > *delgado* (***anelto, **delcado*).

Although there are apparent exceptions to this observation, this fact seems to imply that the chronology of these two syncopes was somewhat similar. Because voicing only occurs in postvocalic contexts, this tells us that voicing must have occurred before syncope. This contrasts with the earlier syncope of French, e.g. SEMITA > *sente* 'path', where voicing was bled by syncope.

As Table 81 above illustrates, the only obstruents after which syncope occurred were /t/ and /s/. Syncope of /tVt/ apparently yielded a geminate which like all geminates simplified in Hispano-Romance, cf. CATTU > *gato* 'cat'. The case of /tVd/ is discussed below.

After /s/, in fact, there are traces of syncope already in Classical Latin. In addition to early attested forms like POS(I)TU, there are also clearly Romance cases like *CO(N)SUĒTŪMINE > *costumne*/*costume* 'custom'[104]. In all of these forms, it is clear that syncope bled obstruent voicing, suggesting a date earlier than such syncopes *verdad,* etc.

After a sonorant, although it is true that cases like CAL(I)DU are also very early, it is not true that all cases of postsonorant syncopes occurring before coronals are early. In the case of syncope after /l/, the presence of both voiced and voiceless reflexes of original /t/ seems to suggest that syncope here interacted with obstruent voicing in Hispano-Romance, e.g. ANHELITĀRE > OS *alentar/alendar* 'breath', SŌLITĀRIU > *solte(i)ro*

[104] Some authors (e.g. Pensado Ruiz, 1984:352) also adduce participles such as *QU(A)ESITU (> OS *quisto*) and VISIT- (> OS *visto*, *revistar*), but these last developments are speculative at best, and it should be noted that the CL participles had in both cases long /i/, i.e. (CON)QUAESĪTUS, VĪSUS. Since restructuring in this last case is necessary—and the form POS(I)TUS could be optionally syncopated even in CL—we most likely are dealing with analogy and **not** sound change.

'unmarried', the participles *vuelto/volto* 'returned', and participial nouns like OFFER(I)TA > *oferta* 'offering'.

The morphologically isolated form *aneldo/eneldo* 'breath' (< ANHĒLITU) gives us a glimpse of the regular outcome of syncope of /lVt/ in Spanish. In other words, since ANHĒLITU was not a participle like *vuelto/volto*, it was never subject to analogy with other participles. Despite this, some scholars (e.g. Harris 1990) have argued that the Spanish verb *alentar* 'breathe' (< ANHĒLITĀRE or metathesized *ALĒNITĀRE) and its corresponding nominalization *aliento* 'breath' are evidence of early syncope here. My survey of early texts has revealed that *aneldo* is indeed the preferred noun in Castilian territory, while *aliento/alentar* appears earliest in Aragonese texts (e.g. 13th century *Vidal Mayor*). Therefore, it appears that Spanish and Portuguese did not originally possess the verb *alentar*.

4.3.2.2.1. **Early syncope? The case of the analogical –TUS participles**

In addition to putative cases of early syncope such as ANHELITĀRE > OS *alentar/alendar* 'breath', SŌLITĀRIU > *solte(i)ro* 'unmarried', the participles *vuelto/volto* 'returned', and participial nouns like OFFER(I)TA > *oferta* 'offering' are often cited as examples of syncope prior to obstruent voicing. In this section, I show that analogy rather than sound change was at work in these participles.

Before discussing *OFFER(I)TA and REFER(I)TA, a short excursus on the Latin participles of FERRE 'carry' and its derivatives is necessary. These forms and their Romance reflexes are given below.

(88) Major Romance reflexes of Latin FERRE participles

OBLATUS (OFFERRE): OS/OP *ofrecido* (*ofrir/ofrecer*), OO *ufert* (*ufrir*), OF *ofert* (*ofrir*), I *offerto* (*offrire*)

PRAELATUS (PRAEFERRE): OS/OP *preferido* (*preferir*), OO *preferit* (*preferir/perferir*), OF *proffert* (*proferre/proferer*), I *preferito* (*preferire*)

RELATUS (REFERRE): OS *referido/reherido* (*referir/reherir*), OP *referido* (*referir*), OC *referit* (*referir*), OO *refert*? (*referre/referir*), *I referito* (*riferire*)

SUBLATUS (SUFFERRE): OS *sofrido* (*sofrir*), OP *sofrido* (*sofrer*), OC *sofert* (*soferre/sofrir*), OO *sufert* (*soffrir/suffrir*), OF *sofert* (*soferre/soffrir*), I *sofferto* (*soffrire*)

Classical Latin FERRE 'carry' had a suppletive participle LATUS, which all of these derivatives had as well. No Romance language inherited this participle. In the historical literature, there is quite a bit of disagreement surrounding the origin of the new Romance participles for these verbs. For instance, DCE and DEC suggest *OFFERITUS, *REFERITUS, *SUFFERITUS. On the one hand, some roots ending in a liquid formed their participles in –TUS, cf. APER-TUS (APERĪRE), MOR-TUS (MORĪRĪ), PAR-TUS (PARERE), SEPUL-TUS (SEPELĪRE). Others took –ITUS, e.g. MOLITUS (MOLERE), PARITUS (PARĒRE), SOLITUS (SOLĒRE). Most languages retain the first group (strong participles and/or adjectives) to this day, cf. S *muerto, abierto*, C *mòrt*, *obèrt*, but some retain the second group as well, e.g. C *mòlt*, OO *mout*. When the original LATUS participle was remade, then, either –TUS or –ITUS were likely candidates.

(89) Analogical restructuring of FERRE participles

OBLATUS (OFFERRE)	⇨	*OFFER(I)TUS
PRAELATUS (PRAEFERRE)	⇨	*PRAEFER(I)TUS
RELATUS (REFERRE)	⇨	*REFER(I)TUS
SUBLATUS (SUFFERRE)	⇨	*SUFFER(I)TUS

Furthermore, the nouns given above containing /rt/ were derived from a FERRE participle:

(90) Nominal derivatives of FERRE participle

*OFFER(I)TA > OS *oferta/oferda* (rare), AL *ofierta*, OP *oferta*, C *oferta*, OO *uferta*, F *offerte* 'offering'

*REFER(I)TA > OS *refierta/rehierta*, OP *referta* 'quarrel', C *referta* 'saying'

Some have interpreted the uniform /rt/ outcome for this /rVt/ context as the result of regular sound change. There, however, is evidence that this was not so. A look at diphthongization in French is revealing. Consider the outcomes of FERETRU 'stretcher' and *OFFERITA 'offering'.

(91) Diphthongization in French

	FERETRU	*OFFERITA
Diphthong /□/	*fieretro	*o(f)fiereta
Syncope	*fiertro	*o(f)fierta
Lenition	N/A	N/A
Later changes	fiertre	*o(f)fierte

Since the Old French mid-vowel diphthongs /je/ and /we/ occur only in originally free or unchecked syllables, *offerte* can not have been the popular descendant of *OFFERITA, since the development of FERETRU > *fiertre* demonstrates that **o(f)fierte* would be the expected result here. If an analogical OFFERTA (actually attested in ML) had been the source here, however, the lack of diphthongization would have been completely expected[105]. The lack of diphthongization in Spanish *oferta/oferda* (cf. AL *ofierta*) is unexpected, especially in light of the diphthongization in *refierta*. Furthermore, OFFERTUS is found in Medieval Latin as early as the fifth century. This suggests another

[105] One may argue that the variation seen in OS *oferta/oferda*[105] offers very strong evidence for an *OFFERITA. The regular outcome here would have had /rd/, cf. *verdad.* If this form is not a scribal error, the above variation, then, suggests that the *–da* form was most likely too unparticiple-like (recall that all participles with *–do/-da* were preceded by a vowel, i.e. *–ado/-ido*, and when a consonant preceded, by *–to*, e.g. S *abierto* 'opened').

(perhaps learned) origin of the form *oferta*. The /t/ ~ /d/ alternation here is reminiscent of that of the deverbal noun *venta/venda* (*vender* ‘sell) ‘sale’ (discussed in § 5.3.1).

According to DCE, OS *refierta/rehierta* is the denominal of *REFERITĀRE, a frequentative of REFERRE ‘carry back’, apparently continued in Old Spanish *refertar* ‘throw back in someone’s face’. Whether noun or verb came first, the source is the participle *REFER(I)TU. However, *REFERTĀRE is rejected on the basis of there being no attested direct descendant of a past participle *REFERTUS (participle of REFERCIŌ ‘stuff’). As illustrated above, there is plenty of evidence for related strong participles like *SUFFER(I)TU ‘suffer’ (e.g. OC *sofert*), as well as derived frequentatives like *SUFFER(I)TĀRE (e.g. C/S *sofertar* ‘endure’ and *refertar* ‘relate, reject’), cited by Corominas himself.

In dealing with relative chronology in Spanish, Pensado-Ruiz (1984: 367) vacillates as to whether syncope occurred before voicing or whether the nouns or participles with /lt/ and /rt/ are really just *cultismos* or perhaps borrowings. This will never really be known, but reliable cases like ANHĒLITU should be taken at face value. With the dubious etymologies and possible workings of analogy set aside, the above discussion hopefully has shown that the only clear cases of syncope predating voicing are ones with /sVt/ like POSITU.

4.3.2.3. **C_2 is a noncoronal obstruent**

In both Spanish and Portuguese, syncope occurred between /s/ or a sonorant and a following noncoronal, e.g. RASICĀRE > *rascar* ‘scratch’, MANICA > *manga* ‘sleeve’, MANŪ-PARĀRE > *mamparar* 'maintain', COLAP(H)U > *golpe/golbe* 'blow', DELICĀTU > *delgado* 'delicate', AMARICĀRE > *amargar* 'bitter' CEREVĒSIA > *cerveza/cerveja* 'beer'.

Except for the very early case of /pt/, the absence of syncope between two heterorganic stops is the norm in Portuguese, e.g. OS *nadga* vs. OP *nádiga* 'buttocks'. From a synchronic perspective, this appears to reflect a constraint on the inventory of allowable codas (i.e. coda condition). Recall from Chapter 2 that only /s/ and the sonorants were permitted codas in Late Latin and early Romance.

After /s/, the following stop is voiced in *rasgar*, yet voiceless in *rascar*. Nunes (1945) and others such as Harris (1990) interpret this as earlier syncope in the case of *rascar*, which suggests that syncope before /k/ was later than before /t/, e.g. *costum(n)e, puesto/posto*. The reasons for this, however, are not clear. In the case of *puesto/posto* (< POS(I)TU), it is known that this form alternated with the full form already in Classical Latin.

After /n/, a following /k/ always voiced (e.g. MANICA > *manga*), yet a following /p/ remained voiceless (e.g MANŪ-PARĀRE > *mamparar*). At first blush, this may seem to indicate different chronology based upon the place of C_2. In light of the across the board voiceless outcome in Hispano-Romance, i.e. /mp/, it appears that syncope here was very early. Any conclusions drawn from this one example, however, are tentative, especially in light of the morpheme boundary (cf. S/P *parar* 'stop'). Comparison with /rp/ is also unproductive, as the compounds *AURI-PIGMENTU and *AUREA-PELLE, both containing AURU 'gold', were recomposed in Spanish (*oro-pimiente, oro-pel*). Therefore, more clear cases like *manga* seem to indicate that before a noncoronal stop syncope occurred after obstruent voicing.

After /l/, /p/ sometimes voiced when syncope occurred, e.g. OS *golpe* and *pulpo*, next to OP *golpe/colbe* and *polvo* (COLAP(H)U 'blow', POLYPU 'octopus'). The voiceless stops in Spanish and occasionally Portuguese suggest that syncope was earlier here. Pensado-Ruiz (1984), in dealing mainly with Spanish, holds the opinion that it would be rash to claim early syncope in this environment, especially in light of the cases where there is voicing in Portuguese (e.g. *colbe, polvo*) and sometimes in French, e.g. *cobe*, *puerve* (FEW).

The fact that the /a/ of the Greek borrowing COLAP(H)U syncopates is an oddity for Hispano-Romance, though not for French. The ending of *colpe/golpe* and the variation found in Portuguese is also suggestive of borrowing from French. It is possible that the Latin ancestor was *COLUP(H)US rather than COLAP(H)US (DCE, DELP). Without dwelling on this issue, it is plausible that these Greek loanwords presenting posttonic /a/ went against the phonotactics of Latin, which limited the unstressed vowels occurring before labials to /u/. Early inscriptional evidence (PERCOLOPABAT 'he struck', Grandgent, 1907) seems to support this hypothesis. The two words which show early syncope, then, COLAP(H)U (or *COLUP(H)U) and POLYPU (or *POLUPU), despite their orthography, would both have presented the environment /lup/ or /lop/. Another possible example of /lp/ is *ALIPE 'wing-footed' or perhaps *ALAPE 'slap' (S *álabe,* OP *ábaa* 'wing, side (tent)'). If this etymology is correct, there is voicing of the obstruent, yet no syncope. Although the lack of syncope may have been due to the vowel change /i/ > /a/ here (if *ALIPE is taken as the source), this very vowel change seems motivated by the obvious semantic relationshup with the noun ALA (S *ála,* OP *aa* 'wing').

While the chronology of syncope before a labial is ambiguous, voicing always occurred in cases of syncope before a dorsal, e.g. DELICĀTU > *delgado.* Before a front vowel, a dorsal was subject to palatalization, e.g. PACE > S/P *paz* 'peace', CALCE > *coç/couce* 'kick'). This segment was voiced after a vowel (i.e. /dz/) and voiceless after a consonant (i.e. /ts/). The fact that syncope appears to have always yielded the voiced fricative /dz/ in both Spanish and Portuguese (e.g. SALICE > *salze*, *Salzeda*) suggests that voicing occurred before syncope. Otherwise stated, the dorsal /ts/ remained in postvocalic position long enough to undergo voicing before syncopating, i.e SALICE > *[salitse] > *[salidze] > [saldze], **[saltse].

There are no cases of syncope in the environment /rVp/, but CEREVĒSIA > *cerveza*/*cerveja* suggests that syncope occurred between /r/ and a labial. Like after /n/, the dorsal /k/ always voiced after /r/, e.g. AMARICĀRE > *amargar.* Even when the velar palatalized before a front vowel, syncope occurred, e.g. SORICE > *sorce/sorze*?.

From the above discussion, it is evident that when syncope occurred before a dorsal, voicing always preceded syncope. It is not clear why labials apparently behaved differently.

Spanish and Portuguese agree in their extension of the original inventory of possible outputs of syncope (/ld/, /rd/, /st/) to all contexts in which C_1 was /s/ or a sonorant and C_2 any obstruent. In other words, /s n l r/ could occupy C_1 position, and there appear to have been no cooccurrence restrictions. Otherwise stated, coronal sonorant + noncoronal obstruent sequences were permitted as was the case in Latin, e.g. OP *comungar, algum, vergonça*.

As the above data show, however, not every theoretically possible output sequence is represented in Tables 81-83, e.g. /sVp/, /nVd/, /lVg/. These gaps are primarily due to one of two factors. First, certain "parent environments" were simply not found in Latin (e.g. /tVp/, /sVp/, /rVp/, /dVp/, /dVb/, dVd/, /lVg/)[106]. Second, the parent environment may have existed, but was not inherited by the daughter language, e.g. /dVp/ (e.g. ADIPE 'fat')[107].

Careful examination of the data in this section also reveals that syncope occurs in both pretonic and posttonic contexts when the C_1 coda is /s/ or a coronal sonorant. Again, this offers no support for the view that word position was a significant variable in syncope (*contra* Williams 1939, as discussed in § 4.3.2.2).

4.3.3. **Syncope between a coronal and sonorant**

4.3.2.1. **C_2 is a liquid**

In contrast to the sporadic instances of coronal obstruent codas at deletion sites, when the coronal obstruent could syllabify as an onset, syncope normally occurred in both Spanish and Portuguese, e.g. *redrar, v(i)edro*. Although the development of /tr/ is pretty straightforward, that of /tl/, /dl/, and /dr/ are somewhat ambiguous due to the interaction of deletion and syncope.

In the context /tVl/, there are very early cases of syncope in Late Latin, and this sequence follows the development of /kVl/ in all of Romance, e.g. VETULU > *viejo/velho* ~ OCULU > *ojo/olho* 'eye'. Syncope also occurs after a coronal stop in the context /tVr/.

[106] The stipulation was that the medial vowel required for syncope had to be non-low.
[107] In the case of syncope after a dorsal, compare /kVb/, found in the dative/ablative of FAX 'torch', FACIBUS.

In the case of /dVr/, it is not so clear whether voiced obstruent deletion or syncope came first in Portuguese, i.e. HEDERA > *e(d)era* > *era* or HEDERA > *e(d)ra* > *era* 'ivy'. There are no popular outcomes continuing /dVl/ to resolve this problem here. It is also unclear whether the sequences resulting from these syncopes were tautosyllabic or heterosyllabic originally. The traditional approach to the development of forms like *ojo/viejo* (e.g. Penny 1984) is that the stop (probably neutralized to /k/ in syllable coda) came to vocalize to /j/, later palatalizing the entire sequence, i.e. [vɛk.lu] > [vej.lo] > PHR *[ve.ʎo]. The problem of this account, however, is that postconsonantal and word-initial /kl/, both tautosyllabic, also come to palatalize in Spanish and Portuguese (e.g. CLAMĀRE > *llamar/chamar* 'call', CONCULA > *concha* 'conch'), and arguments based on heterosyllabicity/vocalization offer no uniform explanation for palatalization in both of these environments (see Wireback 1991 for a discussion of this problem). Based on the evidence presented so far in this chapter, it is not likely that obstruents such as /k/ were ever permissible codas in early Hispano-Romance. It is probably the case, then, that /tl/ and /kl/, like /tr/ and /kr/ emerged as either onsets or geminate sequences after syncope, e.g. *[vɛ.klu] or *[vɛk.klu]. These new word-medial (geminate) obstruent + /l/ sequences were then subject to palatalization in a similar fashion to word-initial obstruent + /l/ sequences, e.g. *[vɛ(k).klu] > *[ve(k).kʎo] > *[ve(ʎ).ʎo], etc.

In the context /tVl/, there are cases such as *cabildo/cabídoo* which are notable for their different development from VETULU. Harris (1991) sustains that these cases demonstrate the resistance of the unusual, impending /t(V)l/ cluster to syncope.

Before so quickly denying the regularity of syncope in this environment, however, one should examine the data more thoroughly. There are clues that the development seen in such forms seems only to apply to learned forms. In the case of *cabildo*, this word is present from the 13th century in both Spanish and Portuguese (i.e. *cabido*), but there are several indications besides the different development of the sequence that this word is learned. First, the vowel /i/ instead of expected /e/ (i.e. ***cabeldo*) sends up a red flag, and, second, the fact that that the regular Romance development of this form is observed in LL CAPICLU (*Appendix Probi*) as the diminutive of CAPUT 'head' (cf. GN *cabelh* 'head'). Unlike Gascon, Spanish and Portuguese made use of another derivative of 'head' (i.e.*CAPITIA). The use of a CAPITULU word in religious circles in medieval times would then account for the learned reentrance of this form as S *cabildo*, P *cabido* (Leite de Vasconcellos, 1959: 85). In addition to the unexpected development of their final vowels, the words *rolde* and *tilde* also show irregular medial vowel developments. Had these words developed regularly, ***ruejo*[108] and ***tejo* would have been the expected Old Spanish forms. All of these irregularities clearly suggest late, learned origins.

However, it is clear that all of these forms with /tVl/ undergo voicing in both Spanish and Portuguese, and eventual syncope in Spanish. This suggests borrowing very early on in Hispano-Romance, cf. MIRACULU > OS *miraglo* 'miracle', PERĪCULU[109] > OS *peligro* 'danger', S(A)ECULU[110] > OS *sieglo* 'century', discussed in § 4.4 below. These forms continuing /kVl/ are not mentioned by Harris (1991). In fact, the development of

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[108] According to DCE, Castilian *rolde* (15th century) and *roldana* (16th century) were borrowed from OC *rotle* 'circle' and *rotlana* 'pulley' (now *rotlle/rotllana*) or (perhaps, in my opinion) ONA *rolda*'circle', which were all apparently later learned borrowings from Latin (cf. regular development in Arag *ruello*, Navar *ruejo*, Cat *rull*, Pg *rolho*). It is not certain whether borrowing is necessary to get the Spanish forms, as syncope did occur throughout the OS period.
[109] Cat/O/OF (in Roland, 1080 CE) forms show palatal.
[110] OP *século* is clearly learned. A "semi-learned" form *sieculo* appears in the *Glosas Emilianenses*, much like OF *s(i)ecle/siegle* and OI *secolo*. OC *sigle* borrowed from Spanish. Sardinian (Logudurian) *seyu* 'young trout' is cited by REW as going back to the 'generation, animal young' meaning of *saeculum*. If this etymology is correct, we can confidently reconstruct OSd **seclu*, to be contrasted with learned *seculu*.

all learned forms continuing /CVl/ in Old Portuguese is the same, i.e. sonorant deletion (/CV(l)/) and the absence of syncope, e.g. *cabídoo, perígoo, diáboo, nódoa*, *régua,* next to the regular syncope of such forms in Spanish.

Syncope after /s/ or a sonorant occured in both languages before a liquid, e.g. I(N)SULA > *isla/ilha* 'island', GENERU > *yerno*/*genro* 'son-in-law', PILULA > *pella*/*pela* 'pill', *VALĒRÁT > *valdrá*/*valrá* 'will be worth', MERULU > *mierlo*, *merlo/melro* 'blackbird', *FERĪRÁT > *ferrá* 'will wound'. The only gap here is /sVr/, and it appears here that syncope may have been disfavored, e.g. A(N)SERE[111] > *ánsar* 'goose'.

4.3.2.2. **C_2 is a nasal**

Spanish differs from Portuguese in allowing syncope when a nasal follows a coronal obstruent, e.g. (RETINA >) *rienda/rêdea*. This difference parallels the mentioned case of learned /tVl/, e.g. **cabidlo* > *cabildo/cabido*. In Spanish, both of these sonorants undergo metathesis with the stop, e.g. /dn/ > /nd/, /dl/ > /ld/.

Syncope after /s/ or a sonorant, however, did occur in both languages before a nasal, e.g. QUADRĀGĒSIMA > *cuaresma/quar(a)esma* 'fortieth', ASINU > *asno* 'mule', ANIMA > *alma* 'soul', ELEĒMOSYNA[112] > *elmosna*/*esmol(n)a* 'alms', ERĒMĪTA > (*h)ermida*. Paradoxically, /nVm/ syncopated in both languages, while /mVn/ only syncopated in Spanish.

[111] AP ANSER NON ANSAR. DCE points out that, despite the /ns/ here, this word is not likely to be learned since we'd expect CL ANSER as the source if this were the case; contamination by *ganso* from Germanic may be the source of /ns/ here. Both reflexes of this word are also present in the oldest texts.

[112] Perhaps the development was something like *elemosna* > *elmosna* > *esmolna* > *esmolla* > *esmola* (DELP).

The Portuguese restriction of syncope before nasals to /s/ or a sonorant is predicted by the coda condition, since any consonant before a nasal would have syllabified as a coda, e.g. RETINA > *[rɛd.na]. Portuguese resisted syncope between stop and /l/ presumably because such a sequence also would have been heterosyllabic, e.g. CAPITULU > *[ka.bid.lu], PERĪCULU[113] > *[pe.rig.lu], 'danger'. Therefore, the resistance of syncope before /l/ and a nasal is due to syllabic rather than strictly sequential factors like */tl/ (*contra* Harris 1991).

4.3.2.3. **Sonorant Deletion in OP**

The interaction of syncope and sonorant deletion (SD) after a coronal in Old Portuguese is examined in Table 13. Pretonic forms are given first, and posttonic forms second, when attested. Hypothetical yet unattested forms are indicated by two asterisks (i.e. **).

Table 83 **The Interaction of *l/n*-deletion and syncope in OP**

		NO SYNC (SD >> SYNC)	SYNC (SYNC >> SD)	
tV(l)	ANĒT(H)ULU	***a˜ed(o)o*	*ae˜dro/endro*	'dill'
	CAPITULU	*cabíd(o)o*	***cabelho*	'chapter'
	VETULU	***véd(o)o*	*velho*	'old'
tV(n)	*RETINAS	*rédeas*	***rednas*	'reigns'
	SĒRŌTINU	*serôdeo*	***serodno*	'eve'
	LL CATĒNĀTU	*cadeado*	***cadnado*	'lock'
(d)V(n)	GC *Todenandi*	*Toande*	***Todnande*	(place)

[113] Cat/O/OF (in Roland, 1080 CE) forms show palatal.

(d)_(l)	NŌDULA	*nódoa*	***nolha/nodra*	‘blot’
(d)_r	*VIDERÁIO	*v(e)erei*	***ve(d)rei*	‘see-1SG.FUT’
	HEDERA	*(e)era*	***edra/eira/era*	‘ivy’
(n)Vp	MANŪ-PARĀRE	***mãoparar*	*mamparar*	‘defend’
(n)Vt	HERMANITĀTE	*irmã(y)dade*	*irmandade*	‘brotherhood’
	REPAENITĒRE	***arrepe˜der?*	*arrepender*	‘repent’
	VANITĀTE	*vãydade*	***vandade*	‘vanity’
	EXTRONITU	***estrõito*	*estrondo*	‘large noise’
(n)Vk	COMMŪNICĀRE	***comu˜(i)gar?*	*comungar*	‘commune
	EL CANONICU	*coõigo*	***congo*	‘canonic’
	DOMĪNICU	***domi˜igo?*	*domingo*	‘Sunday’
	MANICA	***mãega*	*manga*	‘sleeve’
(n)Vs	GC *Spanusindi*	*Esposende*	***Esponsende*	(place)
	GC *Ranusindu*	*Rosendo*	***Ransendo*	(place)
(n)Vm	ANIMA	***ãema*	*alma*	‘soul’
	INIMĪCU	*e ˜(i)miigo*	***enmigo*	‘enemy’
	MONIMENTU	*mõimento*	***monmento*	‘monument’
(n)Vr	GENERĀLE	*geeral*	***genral*	‘general’
	HONŌRĀRE	***(o)orar*	*onrar*	‘honor’
	GC *Honoricu*	*Origo*	**Onrigo*	(place)
	*PŌNERÁIO	***poerei*	*porrei*	‘will put’
	GENERU	***geero*	*genro*	‘son-in-law’
(l)Vp	COLEP(H)U	***coibo/goibo*	*golpe/colbe*	‘blow’
	POLYPU	***poibo/poivo*	*polvo*	‘octopus’
(l)Vt	LL MALITĀTE	***maidade*	*maldade*	‘evil’
	SALŪTĀRE	*saudar*	***saldar/soudar*	‘salute’
	SŌLITĀTE	*soidade/saudade*	***soldade*	‘yearning’
(l)V(d)	CAL(I)DU	***calho/caio,* etc	*caldo*	‘hot’
	CALIDĀRIU	***calheiro/ caieiro*	*caldeiro*	‘vessel’
(l)Vk	*ILICĪNU	*azinho*	***alzinho*	‘holm oak’
	DELICĀTU	***d(e)egado*	*delgado*	‘fine, thin’
(l)Vm	ELEĒMOSYNA	***emosna*	*esmolna*	‘alms’
(l)V(n)	MOLĪNĀRIU	***moinheiro*	*mol(n)eiro*	‘miller’

	BAL(I)NEU	***bainho*	*banho*	'bath'
(l)V(l)	PILULA	***piua/pioa*	*pe(l)la*	'ball'
	*ULULĀRE	*uivar*	***ullar*	'howl'
(l)Vr	COLŌRĀRE	*corar*	***colrar*	'color'
	*SALĪRÁIO	***sairei*	*salrei*	'will leave
rV(l)	MERULU	***méroo*	*merlo*	'blackbird'
	*ŌRULA	***óroa*	*orla*	'shore'
rV(n)	ARĒNĀTU	***areado*	*arnado*	'sandy place'

Starting with cases where C_1 is an obstruent, the majority of these cases demonstrate that sonorant deletion preceded syncope, e.g. ANĒT(H)ULU > *ae˜dro/endro* 'dill', *RETINAS > *rédeas*. If syncope had occurred first, ***a˜ed(o)o* and ***rednas* would be expected. As discussed above, except for really early cases of syncope (e.g. VETULU), deletion of /n/ and /l/ bleeds syncope after /t/ or /d/, e.g. *cabido, nódoa*, *rêdea*, etc.

When C_1 was a sonorant, as seen above, the tendency was for syncope to occur in both Spanish and Portuguese, implying that sonorant deletion failed to take place in Portuguese, e.g. *manga, caldo, pela*, etc. As Table 83 illustrates, however, there are clear cases in which sonorant deletion bled syncope, e.g. *geral*, *vãydade, saudar,* etc. In some cases, up to two sonorants may delete in the same word, e.g *ULULĀRE > *uivar* 'howl'.

When an obstruent followed a sonorant (e.g. *delgado*), syncope regularly occurred in both Spanish and Portuguese, indicating SYNC >> SD. However, forms like *azinho, saudar, soidade* clearly delete /l/, indicating that sonorant deletion occurred before syncope. Why should these two groups behave differently? Although both *saudar* and *soidade* are attested in the 13th century, these words also appear in unsyncopated forms in

Spanish (*saludar, soledad*). Whatever their origin, it is clear that these forms came into both languages by learned channels, after the wave of syncope affecting this context.

Williams (1939: 56-57) argues that syncope after /n/ operated differently in pretonic and posttonic environments. On his account, the difference between *genro* (SYNC >> SD) and *g(e)eral* (SD >> SYN) would reflect this contrast. However, except perhaps for *eimigo*, most of the examples he cites are learned forms, e.g. *geral* (cf. S *general*), *moimento*, *vaidade* (cf. S *vanidad*)[114]. The Germanic borrowing *Honoricu* > *Origo* also shows this later/learned treatment.

On Williams account, *(ar)repender* (cf. OS *arrependir*) is not the result of syncope, but rather of nasal deletion and vowel contraction, i.e. ***(ar)repẽ(n)eder* > ***(ar)repẽ(e)der* > *(ar)repender*. Apparent syncope in the pretonic context of *comungar* (cf. OS *comulgar*) is explained by means of analogy, i.e. remade on posttonic verb forms with early syncope (COMMŪNICŌ > *comungo* >> *comungar*). Due to the complexity of Portuguese nasalization, outside the scope of this dissertation, I merely acknowledge that many of these cases are ambiguous, and could be explained somehow by word poistion *cum* analogy if desired. Nevertheless, the findings in Section 1 revealed no differences in pretonic and posttonic syncope in the context /mVt/, where syncope was presumably "harder" considering that no /mt/ or /md/ sequences existed in Latin. Why, then, would syncope after the coronal nasal be any different? If any difference had existed, one would expect the opposite effect, i.e. syncope (pretonic) and no syncope (posttonic), as occurred after labial obstruents.

[114] If *geral* had developed popularly, we might expect GENERALE > *general* > *ieral* > *iral*, cf. GERMANU > *irmão* 'brother'.

In regard to the other sonorants, it seems that Williams (1939: 55) concedes that syncope always occurred after /m/ or liquid, e.g. *mol(n)eiro, salgueiro*, *arneiro*, etc. In the case that both consonants where subject for deletion, e.g. MOLĪNĀRIU[115], ULULĀRE, syncope preceded deletion of both of the sonorants in popular words like *mol(n)eiro*, and was bled by deletion in learned words like *uivar*. As for *banho/banhar*, in addition to the word BAL(I)NEU**,** syncopated already in Latin, any earlier form ***bál(i)nho/bál(e)nho* would have had the palatal /ʎ/ which was not subject to deletion in Portuguese, cf. SENIŌRE > *senhor* 'sir'. As for *corar, **colrar*, this form is attested rather late, suggesting later derivation from *c(o)or* 'color' (< COLÓRE), never subject to syncope.

Based upon the above discussion of the interaction of syncope and deletion, it is clear that syncope, except in the environment /tVN/ and perhaps /dVN/, always occurred before the deletion of a neighboring /n/ or /l/. Since comparative evidence seems to indicate that deletion of the voiced stops was earlier than that of the sonorants, one may attempt to qualify syncopes like *caldo* as earlier than those of *merlo*, which is probably correct. This argument, however, would rest on data outside of Portuguese, as well as Hispano-Romance, where syncope was regular after all coronal sonorants. This reasoning applies also to arguments for chronology based on voicing, which occurred earlier than syncope in both Spanish and Portuguese (e.g. *delgado*, ***delcado*). This suggests that either syncope occurred in postsonorant contexts, after voicing, but before voiced stop deletion, or that syncope occurred first between a sonorant and voiced stop, and all lenition processes occurred afterward, with another round of syncope(s) recurring again

[115] This word is derived from MOLĪNU , which in Old Portuguese is attested as *moyno* (with retention of /n/?), but the modern form *moinho* suggests earlier */moi̯(j)o/, with deletion of /n/ and nasalization which carried over to the glide. Note that the resulting /ln/ sequence here later develops to /l/.

later (i.e. between sonorant and newly voiced stops)[116]. Based upon the evidence for earlier syncope in forms like CALIDUS, as well as the relatively late retention of /d/ in Spanish and other peninsular dialects (e.g. JŪDICĀRE > OS *judgar/juzgar,* OAL *julgar*), the second hypothesis seems correct, but this requires more investigation.

4.3.3. **Apparent Exceptions to Syncope**

As Table 82 demonstrates, there are a handful of forms which failed to undergo syncope both Spanish and Portuguese. In *tomar*, syncope appears to have been bled by the loss of a word-initial vowel (aphaeresis). As for *dádiva*, the stress shift required here (i.e. **dadiva* expected), possibly influenced by –ITU, -ICU forms (e.g. *débita*) according to DRAE and DCE, or perhaps –IVA (DELP), is problematic. A(N)SERE, like PASSERE, resisted syncope, suggesting a constraint on /s(s)r/.

4.3.4. **The interaction of syncope and voiced obstruent deletion**

As we saw in § 4.2.4, the voiced stops /d/ and /g/ deleted when intervocalic early on in the history of Spanish and Portuguese. This interaction is examined below. For any given environment, pretonic forms given first, posttonic forms after, when attested.

Table 84: **Interaction of syncope and deletion in OS & OP**

C_1=/d/

[116] Forms with sonorant + /g/ are infrequent. The one example I found was the verb ĒRIGERE, which seems to show syncope in most of Romance. In Spanish and Portuguese, note that forms of the 1st singular containing /g/ before a front vowel have /g/ instead of the expected palatalized outcome, on analogy with the 1st singular form. Compare the following forms:
ĒRIGŌ > S yergo, G/P ergo, OO ?, OI ergo (?) ‘erect-1SG’
ĒRIGIT > S yergue, G/P ergue, OO ?, OI erge ‘erect-3SG’

(d)Vt	TRADITŌRE	*traidor*	*treidor*	'traitor'
	PĒDITU	*pedo*	*peido*	'fart'
(d)Vk	PREDICĀRE	*preigar*	*preegar*	'preach'
	(AD)RADICĀRE	*arraigar*	*arreigar*	'root'
	JŪDICĀRE	*judgar*	*juigar*	'judge'
	JŪDICE	*juez*	*juiz*	'judge'
	JŪDICU	*Judgo*		(place name)
	DUODECIM	*dodze*	*doze*	'twelve'
	NĪDICU	*niego*		'hawk'
	PEDICU	*piedgo*		'leg (furniture)'
	*TRĪDICU	*trigo*	*tr(i)igo*	'wheat'
(d)V(g)	GC *Theodegundia*	*Tedguenza*		(place name)
(d)Vs	GC *Adosinda*	*Adsenda*		(place name)
	GC *Todosindi*		*Tousende*	(place name)
(d)Vm	GC *Radimiru*	*Ra(d)miro*		(name)
	REDIMERE	*remir/rendir*	*rem(i)ir*	'redeem'
	GC *Teodomiri*		*Teomil*	(place name)
(d)Vn	GC *Fridenandu*	*Frednando*		(name)
	GC *Todenandi*		*Toande*	(place name)
(d)Vr	HEDERA	*yedra*	*era* (< *edra?)*	'ivy'
	ISIDORU	*Isidro*		(name)

C_2=/d/

tV(d)	NITIDU	*nidio*	*nédeo*	'clear'
	PŪTIDU	*pudio*		'putrid'
nV(d)	BENE-DICERE	*benezir/bendezir*	*b(e)enzer*	'bless'
	BENE-DICTU	*bendicho*	*bento*	'blessed'
lV(d)	CAL(I)DU	*caldo*	*caldo*	'hot'
	CALIDĀRIA	*caldera*	*caldeira*	'vessel'
	MALE-DICERE	*maldezir*	*maldizer*	'curse'
rV(d)	HEREDITĀTE	*her(di)dad*	*herdade*	'inheritance'
	LĀRIDU	*lardo*	*lardo*	'lard'
	VIRIDE	*verde*	*verde*	'green'

C_2=/g/

tV(g)	LĪTIGĀRE	*lidiar*	*lidear*	‘fight’
(d)V(g)	GC *Theodegundia*	*Tedguenza*		(place name)
rV(g)	ĒRIGERE	*erguir*	*erguer*	‘erect’

The two patterns observed above are (1) that syncope bleeds voiced obstruent deletion (i.e. SYNC >> VOD) or (2) that voiced obstruent deletion bleeds any potential syncope (i.e. VOD >> SYNC). In the majority of the above cases, Spanish is of Type 1 (e.g. JŪDICĀRE > *judgar*) and Portuguese of Type 2, (e.g. JŪDICĀRE > *juigar*).

The exceptions to these generalizations are the already mentioned cases of /ld/ and /rd/, which were among the first contexts to undergo syncope, and /rg/, which also appears to have been quite early, cf. ĒRIGERE > F *erdre,* I *ergere* ‘erect’. In the case of /nd/, there are not many forms to work with. As compounds, both BENE-DICERE and MALE-DICERE may have been subject to analogy. However, it is not easy to determine the directionality of analogy. Either *bene(d)izer* was remade as *bendizer*, or *bendizer* was remade as *b(i)enedizer* after deletion gave rise to *benezir*. Although Spanish, to my knowledge, had no **malezir,* French had both *maldire/maleïr*, which suggests that MALE-DICERE followed the development of other cases of /ld/ (e.g. MALE-DICERE > *maudire*, CAL(I)DA > *chaude*), after which the verb was reconstituted as *male(d)ir.* It is likely that BENE-DICERE followed the same trajectory. Therefore, /nd/ also appears to have had syncope before deletion.

When C_1 is /d/, it is evident that obstruent deletion precedes syncope (i.e. VOD >> SYNC) in Portuguese, when an obstruent follows the stop (e.g. *peido, juigar*). In Spanish, however, it is not clear whether the norm for syncope was for syncope to precede obstruent deletion (Type 1, e.g. PEDICU > *piedgo,* JŪDICĀRE > *judgar* 'judge') or for obstruent deletion to precede syncope (Type 2, e.g. JŪDICE > *juez* 'judge', (AD)RADICĀRE > *arraigar* 'take root').

The unusual retention of /ai/ in *traidor* and *arraigar* (cf. MA(G)ICU > *mego* 'nice') is due to the hiatus (i.e. [a.i]) in Old Spanish. The reason for this hiatus seems to be analogy with (or perhaps even derivation from) the respective bases *tra(h)er* 'commit treason' and *raíz* 'root' (< RADĪCE). In support of this is the form *traedor,* also found in Old Spanish. As for *jú(d)ez*, DCE claims that the form is semilearned for lack of syncope.

When C_1 was an obstruent and C_2 was /d/ or /g/, voiced obstruent deletion preceded syncope in both Spanish and Portuguese (Type 2), e.g. NITIDU > *nidio/nédeo* 'clear', LĪTIGĀRE > *lidiar/lidear* 'fight'. When a liquid (or nasal) preceded, however, syncope always bled voiced obstruent deletion, e.g. *caldo, erguir/erguer*, etc.

It is not clear whether word position (i.e. pretonic versus posttonic) plays a role in syncope here. The Germanic borrowings *Tedguenza, Adfonso, Radmiro*, and *Frednando* suggest that pretonic syncope preceded obstruent deletion in Germanic borrowings into Old Spanish. The problem with this conclusion is that a development such as *Adefonsu* > *Adfonso* surprisingly retains /f/ unvoiced, cf. *MALE-FATIU > *malvazo* 'bad, evil'. Although this fact alone is not a basis for dismissing any generalizations made from these forms, it suggests that at least some Germanic borrowings were late enough not to have undergone obstruent voicing. Nevertheless, it is significant that all of these forms still undergo syncope in Spanish, since this demonstrates that syncope in these contexs was quite recent (probably after the 5th century Germanic invasions).

When /d/ could syllabify in the following syllable, syncope also appears to have occurred, although Portuguese is ambiguous here, i.e. the only representative of /dVr/, *era* (HEDERA 'ivy'), could stem from either Type 1 or Type 2 scenarios: HEDERA > **edra* > *era* (Type 1), or HEDERA > **e(d)era* > *era* (Type 2). Given that syncope leading to /dr/ would have posed no coda infractions, it is likely that the Type 1 scenario obtained for both Spanish and Portuguese.

Table 15 below summarizes the findings for this section. As usual, the time dimension is represented on the vertical axis, with three relative stages, Proto-Hispano-Romance, Old Spanish, and Old Portuguese. Any changes to the inherited environment (i.e. obstruent deletion or syncope) are in bold. Compare the effect of inverting the position of /d/ (from C_1 to C_2 and vice versa) in the following examples.

Table 85: Effect of the position of /d/ on syncope

Proto-Hispano-Romance

C_1	(dVp)	dVt	dVk	dVm	dVn	dVL
C_2	pVd	tVd	kVd	mV(d)	nV(d)	**L(V)d**

Old Spanish

C_1		(d)Vt?	**d(V)k**	**d(V)m**	**d(V)n**	**d(V)L**
C_2	**p(V)d**	tV(d)	kV(d)	mV(d)	**n(V)d?**	**L(V)d**

Old Portuguese

C_1		(d)Vt	(d)Vk	(d)Vm	(d)Vn	(d)Vl	**d(V)r?**
C_2	pV(d)	tV(d)	kV(d)	mV(d)	nV(d)	**L(V)d**	

From the Old Spanish facts above, it is clear that syncope was more favored (i.e. SYNC >> VOD) when C_1 was /d/ than when C_2 was /d/[117]. That is, given two contexts /dVk/ and /kVd/, or /dVm/ and /mVd/, the first one with /d/ in C_1 position was either more subject to syncope or less subject to obstruent deletion than the other.

(92) /dVk/ versus /kVd/

/dVk/	(syncope)	PEDICU	*piedgo*	'leg (furniture)'
/kVd/	(deletion)	SUCIDU	*suzio*	'dirty'

These results support the claim that markedness plays a role in syncope. Otherwise stated, syncope after a coronal stop or nasal is more favorable than after a stop or nasal of another place of articulation.

4.3.5. **The interaction of syncope and apocope**

As we saw in § 4.2.5, apocope also could interact with syncope. Apocope transformed antepenult stress to penultimate stress, leaving no enivronments for syncope.

The different development of *juez* and *judgar* mentioned above is perhaps due to deletion of the final vowel /e/ (apocope) in the first form, which would have impeded syncope, i.e. JUDICE > **júdize* > *ju(d)ez*. Forms ending in /o/ like *Judgo* and *piedgo,* not subject to apocope, however, later syncopated.

Table 86 The interaction of syncope and apocope

dVk(e)	JŪDICE	*juez*	*juiz*	'judge'

[117] Note that in the case of /NVd/, /d/ remained in the examples seen above because of the morpheme boundary, i.e. /nV#d/. Nevertheless, it is still possible that such forms were still subject to syncope early on.

	DUODECIM	*doiz/dodze*	*doze*	'twelve'
sVk(e)	*ĪSICE		*irze*	'salmon'
lVk(e)	SALICE ŪLICE	*salze/sauze* *urze*		'willow' (plant)
rVk(e)	SŌRICE	*sorce*		'mouse'

Apocope occurs after word-final /ke/ sequences, which had by thus time already developed to /dze/, e.g. *juez/juiz* and *doiz*. Numerals derived from *diez* 'ten' (DECIM), e.g. *onze* 'eleven' (UNDECIM), *dodze/doiz* 'twelve' (DŌDECIM), *tre(d)ze* 'thirteen' (TRĒDECIM), etc. were subject to analogy. If apocope had occurred, forms such as ***óndez, **dó(d)ez* (> *doiz*)*, **tré(d)ez*, would have been expected. The fact that *doiz* is found attests to the application of apocope in at least one of these numerals. However, it is not clear why the *–e* of these forms was restored. According to DCE, these numerals retained /d/ for some time on the model of *diez,* long enough to syncopate, i.e. ***dodez(e)* > *dodze*, preventing subsequent apocope. This brings us no closer to understanding the chronology of syncope and VOD here, however. Perhaps a traditional account such as Menendez Pidal's, in favor of optional syncope/VOD, ought to be reconsidered. See Pensado-Ruíz (1984) for a discussion of this topic.

It is clear that forms ending in /o/ like *Judgo* and *piedgo* contained a different environment (before /g/) than *juez* (before /dz/). It was found in § 4.2.1.2 that labial + noncoronal sequences were more resistant to syncope than labial + coronal sequences. If the Latin cluster condition also applied to these cases at hand, then it would be more likely for syncope to occur between two coronals (e.g. /dVdz/) than a coronal and a dorsal (e.g. /dVg/). That said, it is not plausible to argue that the reason for the different development of these forms is the different C_2. Had this been the case, syncope would have applied first in *ju(d)ze*, thus preventing any subsequent apocope. This demonstrates that syncope did not occur in any original /dVk/ environment before the application of apocope and voiced obstruent deletion.

In the remaining forms, syncope bled any apocope, e.g. *irze, salze, urze*. This demonstrates that syncope in contexts leading to a sibilant or sonorant coda (e.g. /sVk/, /lVk/, and /rVk/) occurred earlier than in in contexts leading to an obstruent coda (e.g. /dVk/). This reflects the already noted coda condition of early Hispano-Romance.

4.3.6. **Syncope after a coronal: Conclusions**

In this section, it was found that syncope occurred in the following contexts in early Spanish and Portuguese.

(93) Coronal contexts for syncope

Always after a coronal liquid, nasal, or sibilant

Between a coronal stop and liquid, which could syllabify as a complex onset

In Spanish, syncope came to occur after all coronals, regardless of the consonant that followed.

It has been suggested that markedness may play a role in syncope. In our examination of syncope producing labial and coronal codas, it has been found that syncope after a coronal C_1 was more favored than syncope after a labial C_1. This may be due to the fact that coronals were less marked codas than labials. There is conflicting evidence that the place of C_2 may have also been a determining factor in syncope. Comparing the apparent priority of obstruent deletion in Old Spanish *pedo* (< PE(D)ITU) to the syncope of *piedgo* (< PED(I)CU) seems to offer no support for the Latin Cluster Condition, i.e. syncope ought to have occurred between the two coronals of the first form earlier than before the dorsal of the second form. However, it is plausible to consider *pedo* the result of syncope, i.e. **pédido* > **peddo* > *pedo*. Thus /dVt/ and /dVk/ may both have syncopated before obstruent deletion. That is, /d/ is equally likely to undergo syncope before coronal and noncoronal. The upshot, then, is that there is no support for a C_2 effect on syncope so far. The effect of markedness on syncope is further investigated in § 4.4 below.

4.4. **Syncope after a dorsal consonant**

In this section, syncope after the dorsal obstruents /k/ and /g/ is investigated. Although all of Romance except Sardinian shows some palatal reflex of /k/ before a front vowel, and all of Western Romance seems to have had at one point /dz/, I include this segment with the developments of the velars, since it is not known whether this segment was /kʲ/, /tʃ/, /ts/, or their voiced counterparts at the time of syncope. When examples of both palatalized /k/ or /g/ are cited, the palatalized forms are given first.

In the following forms, syncope occurred in both Spanish and Portuguese, producing a CC sequence at deletion site

Table 87 **Syncope after Dorsal**

a. Pretonic

kt	*AMICITĀTE[118]	*amiz(d)ade*[119]	*amizade*	'friendship'

[118] OP *amiçade* (12-early 13th century), and *amizade* (13th century) both occur (DELP). The form *amicidade/amizidade* (15th century) is learned.

[119] OS *amiztat* requires some comment. In light of *rez(d)ar* and *plaz(d)o*, we should expect **amiz(d)at*, which is in fact attested (see TDMS). The loss of this form **amizat* in favor of apparently remade *amiztat/amistat* was due to the greater trasparency of the latter *–tat/-dat* formative.

	RECITĀRE	*rez(d)ar*	*rezar*	'pray'
kl	*MACULĀTA	*majada*		'spot'
kr	JACERÁT	*jazrá*	*jará*	'lie-3SG.FUT''
	MŪCŌRE	*mugriento*		'dirty'
gk	*FĪGICĀRE[120]	*fi(n)car*	*fi(n)car*	'drive in'
gl	COAGULĀRE	*cuajar*	*coalhar*	'curdle'

b. Posttonic

kt	PLACITU	*plaz(d)o*	*prazo*	'term'
kl	-CULU/-A	*-jo/-a*	*-lho/-a*	(suffix)
kr	ACERE[121]	*azre/arze*		'maple tree'
	SĪCERA	*sizra*		'cider'
gl	COAGULU	*cuajo*	*coalho*	'curdled milk'
	LIGULA	*legra*		'bone cutter'
	REGULA	*reja/regla*	*relha/regra*	'grate, rule'
	TEGULA	*teja*	*telha*	'tile'

The forms below undergo syncope occurred only in Spanish. Most of these forms have a nasal C_2.

Table 88 **No Syncope in Portuguese**

a. Pretonic

kn	MACHINĀRE	*maznar*		'grind'

b. Posttonic

km	DECIMU/-A	*diezmo*	*dézima/dízima*	'tenth, tithe'

[120] Galician and Portuguese distinguish between *ficar* 'remain' and *fincar* 'drive in'.
[121] Unsyncopated *ázere* is attested in Sigüenza, 1600.

kn	ACINU		*ázeo*	'berry, grape'
	DŪRACINU	*durazno*	*durázio*	'peach'
	RICINU	*rezno*		'tick'
	*ROTICINU	*rodezno*	*rodízio*	'wheel of mill'
	ARCHIDIACONU	*arci(di)a(g)no*	*arcidiag(o)o*	'archdiocese'
kl	MIRACULU	*miraglo*	(*miragre*)	'miracle'
	PERĪCULU	*periglo*	*perígoo*	'danger'
	S(A)ECULU	*sieglo*	(*sigre*)	'century'

Posttonic syncope failed to occur in both Spanish and Portuguese in the following forms.

Table 89 **No Syncope**

a. Pretonic

kVn	PRAECŌNĀRĪ	*pregoar*	*pregoar*	'proclaim'

4.4.1 Syncope between a dorsal and obstrue

4.4.1.1 C_2 is a coronal obstruent

In Spanish and Portuguese, syncope occurred in both pretonic and posttonic /kVt/ contexts, e.g. *AMICITĀTE > *amizdade/amizade* 'friendship', RECITĀRE > *rezdar/rezar* 'pray', and PLACITU > *plazdo/prazo* 'term'[122]. Palatalization occurred before syncope, since loss of the vowel entailed loss of the palatal context. The original sequence passed through a stage with /dzd/, which later simplified to /dz/, e.g. OS *plazdo* or *plazo*. The voiced outcomes of /kVt/ imply that obstruent voicing occurred prior to syncope. Had

[122] Since in all cases of unstressed /kVt/ the only intervening vowel is /i/, it is not possible to contrast the development of the velar with that of the palatal.

syncope occured first, /ts(t)/ would have been expected. As we examine in Chapter 5, this development parallels that of /kkVt/, which yielded /ts(t)/, e.g. *ACCE(P)TŌRE > OS *aç(t)or/*OP *açor* ‘hawk’.

Note that syncope in the original /kVt/ context did not yield /kt/, which would have followed the development of original /kt/ to palatal /tʃ/ in Spanish and /jt/ in Portuguese, e.g. FACTU > OS *fecho/hecho*/OP *feito* ‘done’. In contrast, French shows very early syncope leading to a new /kt/ sequence which follows the same development of the original sequence, cf. PLACITU > **plactu* > *plait,* cf. FACTU > *fait.* Here it is clear that /k/ was not yet /dz/, and /t/ had not yet voiced to /d/ at the time of syncope.

4.4.1.2 C_2 is a noncoronal obstruent

There are very few forms with a noncoronal C_2. There is only one case of syncope, i.e. FĪGICĀRE > *fi(n)car* ‘drive in’, which is generally thought to have syncopated very early due to its wide diffusion, cf. I *ficcare*, OF *fichier*. Syncope clearly occurred before obstruent voicing here. Otherwise, something along the lines of ***fi(g)gar* would be expected. Along with RASICĀRE (> *rascar* ‘scratch’)/ QUASSICĀRE (> *cascar* ‘deshell’) and COLAPHU (> S *golpe* ‘blow’)/POLYPU (> S *pulpo* ‘octopus’), this form stands out for its very early syncope before a noncoronal. The reason for such early syncope may be the identical place features of C_1 and C_2. Recall that MATUTĪNU (> OS *matino* ‘morning’), if native, is also an early case of syncope between segments of identical place.

Other than FĪGICĀRE, the absence of syncope in RECUBĀTU > *recovado* ‘sprawled out’ could be attributed to the lack of similarity between the two noncoronals (i.e some instantiation of the Latin Cluster Condition). Although no verb *recovar* is attested to my knowledge, it is not clear whether analogy could have at some point influenced the derived adjective *recovado*. The lack of voicing to ***regovado* here is due either to learned entrance of this word or, most likely, to the morpheme boundary, i.e. *re-covado*. In any case, the /kb/ here differs from the other wellformed sequences like /kt/ (really OS /dzd/), acceptable in Latin, in that it contains two noncoronal segments.

In the following verbs with variable stress in the present tense, it is not clear whether or not analogy with a related form may have played a role in vowel retention. Related forms are parenthesized, and stressed vowels are underlined.

(94) Non-occurrence of pretonic syncope due to possible analogy

kVp	RECUPERĀRE	*recobrar* (*recobro*)	*recobrar*	'recover'
kVt	RECUTĪRE (*recudo*)	*recudir*	*recudir*	'respond'

Analogy with *cobrar, *cudir* could also have disfavored syncope, as well as voicing, cf. *recovado*.

4.4.2 **Syncope between a dorsal and a sonorant**

4.4.2.1 **C_2 is a liquid**

Like the other examined cases of obstruent + /r/, /kVr/ syncopated in both Spanish and Portuguese. When the intervening vowel was front, /ts/ or /dz/ resulted. Unlike Spanish, Portuguese deleted this segment, e.g. JACERÁT > *jazrá*/(**jazrá* >) *jará* 'lie-

3SG.FUT'. In Old Spanish, the sequence /dzr/ occurred early on, later undergoing metathesis, e.g. OS *azre* > *arze* > *arce* 'maple tree' (< ACERE). The only example of non-palatalizing /k/ is the derived form *mugriento* 'dirty' (< MUGOR).

As Tables 18 and 19 illustrate, there are three separate developments for /kVl/ and /gVl/. As Nunes (1945: 120) correctly points out, the diversity in the Portuguese forms is likely due to words entering at different times by literary channels. As we saw with /tVl/, the oldest development was syncope, with /kl/ or /gl/ becoming the palatal /ʎ/ (Portuguese), i.e. <lh>, becoming /ʒ/ by Old Spanish, i.e. <i>, <j>, <gi>, cf. *ojo/olho.*

Thus next to the completely popular development REGULA > *reja*/*relha*, there are learned reflexes, e.g. OS *regla*, OP *regra*/*régua*. The retention of /g/ in *regra/régua* attests to the later entrance of these forms. What is not clear is the cause of the variation of forms like *regla/regra* versus *régua*. Unlike forms like *bág(o)o* and *artíg(o)o* (< ARTICULU, also earlier *artelho*), with voicing and sonorant deletion but not syncope, forms like *segre* and *regra* were subject to syncope, and in the case of *segre*, lenition as well. Unless *regra*, *segre* (< SAECULU), etc. were borrowed from dialects in already syncopated form (see Williams 1939, Nunes 1945), this suggests that at some point another syncope occurred after a dorsal (perhaps dialectally). This trend may be supported by developments like JACERÁT > **jazrá* > *jará*, which show syncope, but in this case the dorsal palatalized prior to syncope.

In contrast to the marked absence of syncope between a velar and liquid in Portuguese, Spanish has regular syncope, with either /gl/ (*regla*, *sieglo)* or /gr/ by metathesis (MIRACULU > *milagro* 'miracle', PERICULU > *peligro* 'danger').

4.4.2.2 C_2 is a nasal

While many Spanish forms instantiate syncope before a nasal (e.g. DŪRACINU > *durazno* 'peach', ARCHIDIACONU > *arci(di)a(g)no*), Portuguese clearly failed to undergo syncope in this context (e.g. *durázio* 'peach', *arcidiag(o)o* 'archdiocese'). Although syncope clearly failed to occur before /m/ (e.g. DECIMA > *dízima* 'tithe'), n-deletion reduced the originally antepenultimate stress pattern of these forms containing /n/ to penultimate stress, preventing any posterior syncope, e.g. DŪRACINU > **durázi(n)o* > *durázio*.

Spanish and Portuguese agree in the application of syncope after /k/ (i.e. [dz]) in all contexts but before a nasal. This appears to reflect the mentioned coda condition, since apparently the resulting sequence would be heterosyllabic, i.e. [dz.n].

4.5 Interaction of Syncope and voiced obstruent deletion

Voiced obstruent deletion also interacted with the syncope after a dorsal in both Spanish and Portuguese. The forms in Table 20 lost either /d/ in C_2 position, /g/ in C_1 position, or both.

Table 90 **Interaction of syncope and voiced obstruent deletion**

C_2 = /d/

kV(d)	LŪCIDU	*luzio*		'bright'
	SŪCIDU	*suzio*	*súcio/sujo*	'dirty'
(g)V(d)	FRĪGIDU	*frío*	*frio*	'cold'
	RIGIDU	*recio*	*rijo/rejo/rexo*	'rigid, strong'

C_1 = /g/

(g)Vt	CŌGITĀRE	*cuidar*	*coidar/cuidar*	‘care for’
	DIGITU	*dedo*	*dedo*	‘finger’
	EGITĀNIA		*Idanha*	(place)
(g)Vk	*FĪGICĀRE	*ficar/hicar*	*ficar*	‘drive/stay’
	MAGICU	*mego*	*meigo*	‘nice’
(g)V(d)	FRĪGIDU	*frío*	*frio*	‘cold’
	RIGIDU	*recio*	*rijo/rejo/rexo*	‘rigid, strong’
(g)Vn	-GINES	*-enes*	*-gens*	(suffix)
	FERRAGINE	*ferrén/herrén*	*ferrã(e)*	‘rust’
(g)Vm	GC *Ragimundu*	*Raimundo*		(name)
(g)Vl	VIGILĀRE	*velar*		‘watch, lay awake’
	COAGULU	*cuajo*	*cualho*	‘curdled milk’
	REGULA	*reja/regla*	*relha/régua*	‘grate, rule’
(g)Vr	*FRIGERAT	*freirá*	*fregirá*	‘fry-3SG.FUT’
	*LEGERAT	*leerá*	*lerá*	‘read-3SG.FUT’

All of the above forms contain an obstruent C_1. Except before a liquid, syncope normally failed to occur. Othwerwise stated, after an obstruent, voiced obstruent deletion tended to bleed syncope. For example, both /d/ (e.g. *suzio, frio*) and /g/ (*dedo, mego*) deleted prior to syncope. As we have already seen in the interaction of deletion and syncope with labials and coronals, when a C_2 was /d/, it did not always delete before the application of syncope, e.g. *caldo* ‘hot’, *verde* ‘green’. As for /g/, except for the one form *erguir* ‘raise’ (< ERIGERE) with a /g/ in C_2 position after a liquid, /g/ always deleted before syncope, e.g. *lidi<g>ar* ‘fight’ (< LITICĀRE). Thus syncope between a liquid and voiced stop was early enough to bleed later obstruent deletion.

There were also cases of /d/ in C_1 position not deleting, e.g. *piezgo* 'leg (furniture)', etc. When a C_1 was /g/, it was retained long enough to create a geminate, e.g. *FĪGICĀRE > **ficcar* > *ficar/hicar* 'drive'.

Latin /g/ before a front vowel, after developing most likely to [dʒ] or [j], deleted early on, e.g. RĒGĪNA > *reína/rainha* 'queen'. The chronology VOD >> SYNC also applied in *cuidar, dedo, frío/frio, me(i)go* above. While the OP suffix *–gem/-gens* is considered (semi)learned by Williams (1939), he makes no mention of either of the above examples of (g)Vk, e.g. *FĪGICĀRE, MAGICU, etc. In Spanish, the development of the suffix –GINE(S) > *–én/-enes, ín/-inis* occurred in the following manner: *BURRĀGINE > **borraine* > **borrein(e)* > *borrén* 'rust', LL FULLĪGINE > **folliine* > *follín/hollín* 'soot'.

As discussed above, most scholars (e.g. REW) assume an early syncopated *FĪGCĀRE/FICCARE to account for the Romance outcomes of this form, cf. OF *fichier*, I *ficcare*[123]. Syncope between two velars is reminiscent of the already discussed case of syncope between two coronals, e.g. *mat(u)tino* (if native) and *plaz(i)do.* In the cases of *matino* and *ficar*, syncope preceded intervocalic voicing, indicating a very early (probably common Romance) date.

Although *ficar* may have undergone early syncope, it is clear that *me(i)go* 'nice' did not, i.e. MAGICU > *[magku] > *[makku] > ***maco*. The difference in the development of these two words could be a product of word position, with syncope favored in pretonic contexts. In light of the lack of evidence for any significant role of word position in syncope, however, it is preferable to look elsewhere for an explanation for the different development of these two words. In dealing with Romance syncope in this postvelar context, Fouché (1958: 462-463) argues for the regular deletion or

[123] Cf. *LIGICĀRE > OF *lechier*, RR *licher*, I *leccare* 'lick'.

coalescence of /g/ (or [j]) with neighboring high vowels, i.e. *īgi > ī(j) > i*, *igi > i(j) > e*, e.g. FRĪGIDU > **frījdu > frido > frio,* DIGITU > **dijdu > dedo.* Fouché attributes cases of retention of /g/ and later syncope in some areas, e.g. FRĪGDU (> I *freddo*), *FĪGCĀRE (P *ficar*, I *ficcare*) to analogy, e.g. with the corresponding synonyms FRĪGUS 'cold', FĪGO 'fix'[124]. Fouché's account is very plausible. Exactly as formulated, however, it fails to account for Spanish and Portuguese forms like *cuidar* and *mego/meigo*, in which deletion of /g/ bled syncope in a context not after /i/. It appears, then, that deletion of /g/ was extended to all contexts before /i/ or a front vowel in Hispano-Romance. In all of the above cases but *ficar*, this deletion process did indeed bleed syncope.

Grandgent (1907) posits a syncopated *DICTU 'finger' and *FRIGDA 'cold' for Late Latin, supported by hypercorrections like DIGITUS NON DICITUS and FRIGIDA NON FRICDA found in the Appendix Probi, as well as inscriptions such as FRIDA (Pompeii) and FRIGDARIA (second century, place not cited). In Spanish and Portuguese, it is clear that DICTU and FRIGDA, however, would most likely have developed like other instances of syllable final velars, i.e. for Spanish /kt/ > [jt], e.g. DICTU 'said' > *dicho*. Since this was not the case, it is only possible to reconstruct *DI(G)ITU for Hispano-Romance and probably Italo-Romance (e.g. I *dito*).

Therefore, it appears that syncope between two velars (e.g. FĪCCĀRE) was indeed earlier than in other contexts (e.g. DIGITU). In these non-syncopating environments, VOD applied (e.g. DI(G)ITU), bleeding any subsequent syncope. When this /g/ was restored by analogy, however, syncope could occur in some areas, e.g. *FRI(G)IDU >> FRIGIDU (on model of FRIGO, etc.) > FRIGDU > I *freddo*.

[124] In light of the support for retention and syncope of the velar early on in French and Italian, it may be possible that *FĪG(I)CĀRE was borrowed into Ibero-Romance, perhaps from Roman Latin.

The case of MAGICU (> *mego/meigo* ‘nice) in Hispano-Romance can then be handled by limiting syncope to only pretonic contexts, or by assuming that /g/ survived here on the model of MAGU ‘magic, magician’. Analogy could have been favored by the productivity of the suffix -ICU. Given the scarcity of evidence that word position was a significant variable in syncope, it is probable that analogy was responsible for the development of this form.

In the case of /kVd/, e.g. LŪCIDU and SŪCIDU, it is clear that the deletion of /d/ normally bled syncope. Recall that /kVt/ did eventually syncopate, but after palatalization and voicing. The relatively late syncope in this context suggests that non-geminate (i.e. heterorganic) dorsal codas were at first disfavored. In other words, outputs of syncope in Spanish could be /kk/ or /gk/, but not /kt/, /gt/, /gd/, etc.

Table 21 summarizes the findings for this section. By keeping the dorsal C_1 constant and changing the place and manner of C_2, the effect of the second consonant can be tested. As usual, the time dimension is represented on the vertical axis, with three relative stages, Proto-Hispano-Romance, Old Spanish, and Old Portuguese. Any changes to the inherited or original environment (i.e. obstruent deletion or syncope) are in bold. Sequences in parentheses were not found in Latin.

Table 91 **Effect of C_2 on the syncope of a dorsal C_1**

Proto-Hispano-Romance

C_1								
/k/	kVt	(kVk)	kVd	(kVg)	kVm	kVn	**k(V)l**	**kVr?**
/g/	**(g)Vt**	**g(V)k**	**(g)Vd**	(gVg)	**(g)Vm**	**(g)Vn**	**(g)(V)l**	(gVr)

Old Spanish

/k/	**k(V)t**	(kVk)	**kV(d)**	(kVg)	**k(V)m**	**k(V)n**	**k(V)l**	**k(V)r**
/g/	(g)Vt	g(V)k	(g)Vd	(gVg)	(g)Vm	(g)Vn	(g)Vl	(gVr)

Old Portuguese

/k/	**k(V)t**	(kVk)	**kV(d)**	(kVg)	kVm	**kV(n)**	**kV(l)**	**k(V)r**
/g/	(g)Vt	g(V)k	(g)Vd	(gVg)	(g)Vm	(g)Vn	(g)Vl	(gVr)

In Section 4.7, it was found that homorganicity of C_1 and C_2 favored early syncope (e.g. *FĪG(I)CĀRE) in cases in which a heterorganic sequence emerged from syncope. Due to the early deletion of /g/ or [dʒ] in all other cases but this one, no other conclusions can be drawn from cases of syncope after /g/. Furthermore, Spanish shows syncope between /k/ or [dz] and whatever consonant follows (e.g. PLACITU > *plazdo* 'term', DECIMU > *diezmo* 'tithe', etc.). The failure of syncope in Portuguese in any context but /kVt/ or [dzVd], however, does offer support for a homorganicity effect, here between coronals.

4.6 Chapter conclusions

Tables 92 and 93 present all of the discussed Spanish and Portuguese reflexes of original C_1VC_2 contexts. In both tables, C_1 is on the vertical axis and C_2 on the horizontal axis.

Table 92 **Syncope CVC: Spanish**

	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
p	pp	pb	pt	pd?	pk	pg	pf	ps	pm	pn	pl	pr
b	bp	bb	bt	bd	bk	bg	bf	bs	bm	bn	bl	br
t	tp	tb	tt	td	tk	tg	tf	ts	tm	tn	tl	tr
d	dp	db	dt	dd	dk?	dg	df	ds	dm	dn	dl	dr
k	kp	kb	kt	kd	kk	kg	kf	ks	km	kn	kl	kr
g	gp	gb	gt	gd	gk	gg	gf	gs	gm	gn	gl	gr
f	fp	fb	ft	fd	fk	fg	ff	fs	fm	fn	fl	fr
s	sp	sb	st	sd	sk	sg	sf	ss	sm	sn	sl	sr
m	mp	mb	mt	md	mk	mg	mf	ms	mm	mn	ml	mr
n	np	nb	nt	nd	nk	ng	nf	ns	nm	nn	nl	nr
l	lp	lb	lt	ld	lk	lg	lf	ls	lm	ln	ll	lr
r	rp	rb	rt	rd	rk	rg	rf	rs	rm	rn	rl	rr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

	Syncope
	Syncope, possible analogy or borrowing
	No syncope
	No syncope, possible analogy or borrowing
	No syncope, learned word
	No syncope at the time of C deletion
	No candidates continued in Romance

Table 93 **Syncope CVC: Portuguese**

	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
p	pp	pb	pt	pd	pk	pg	pf	ps	pm	pn	pl	pr
b	bp	bb	bt	bd	bk	bg	bf	bs	bm	bn	bl?	br
t	tp	tb	tt	td	tk	tg	tf	ts	tm	tn	tl	tr
d	dp	db	dt	dd	dk	dg	df	ds	dm	dn	dl	dr
k	kp	kb	kt	kd	kk	kg	kf	ks	km	kn	kl	kr
g	gp	gb	gt	gd	gk	gg	gf	gs	gm	gm	gl	gr
f	fp	fb	ft	fd	fk	fg	ff	fs	fm	fn	fl	fr
s	sp	sb	st	sd	sk	sg	sf	ss	sm	sn	sl	sr
m	mp	mb	mt	md	mk	mg	mf	ms	mm	mn	ml	mr
n	np	nb	nt	nd	nk	ng	nf	ns	nm	nn	nl	nr
l	lp	lb	lt	ld	lk	lg	lf	ls	lm	ln	ll	lr
r	rp	rb	rt	rd	rk	rg	rf	rs	rm	rn	rl	rr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

This chapter has also examined some crucial interactions of syncope and such lenition processes as obstruent voicing, voiced obstruent deletion, and sonorant deletion. These interactions permit us to reconstruct an approximate timeline for syncope in Hispano-Romnce.

Table 94 below illustrates the spread of syncope in CC contexts in Spanish and Portuguese. C_2 is held constant to test the effect of C_1 on syncope. The chosen C_2 consonants are /t/, /k/ (and [tʃ]), /d/, /g/ (and [dʒ]), /m/, /n/, /l/, and /r/. The stop /p/ was too infrequent to include in this comparison. These are the most robustly represented contexts in the data set, which minimally allow us to test the significance of the following variables on syncope: coronal versus noncoronal, obstruent versus sonorant, nasal versus liquid, etc.

Chronology is represented below by five stages, Proto-Romance (PR), Proto-Hispano Romance (1-2), Pre-Spanish, and Pre-Portuguese. Unattested sequences or contexts with no Romance outcomes are simply left blank. Note that in this table only syncope is in bold.

Table 94 **The effect of C_1 place on the chronology of syncope**

PR	PHR1	PHR2	PS	PP
p(V)t	(p)t	t	t	t
t(V)t	(t)t	t	t	t
tʃVt	tsVt	**dz(V)d**	dzd	dz
bVt	vVt	vVd	**v(V)d**	vVd, **v(V)d**?
dVt	dVt	ðVd	**ð(V)d**	(ð)Vd
gVt				
fVt				
(dʒ)Vt	Vd	Vd	Vd	Vd
s(V)t	st	st	st	st

mVt	mVt	**m(V)d**	nd	nd
nVt	nVt	**n(V)d**	nt, nd	nd
lVt	lVt	**l(V)d**	lt, ld	lt, ld
rVt	rVt	**r(V)d**	rt, rd	rt, rd
pVtʃ				
tVtʃ				
kVtʃ				
bVtʃ	vVts	vVdz	**v(V)dz**	
dVtʃ	dVts	ðVdz	**ð(V)dz**, (ð)Vdz	(ð)Vdz
gVtʃ				
fVtʃ				
(dʒ)Vtʃ				
sVtʃ	sVts	zVdz		**z(V)dz** (> rz)
mVtʃ	mVts	**m(V)dz**	nz/zn	zm
nVtʃ				
lVtʃ	lVts	**l(V)dz**	lt, ld	lt, ld
rVtʃ	rVts	**r(V)dz**	rt, rd	rt, rd
(pVk)				
tVk	tVk	dVg	**d(V)g**	dVg
kVk				
bVk	vVk	vVg	**v(V)g**	vVg
dVk	dVk	ðVg	**ð(V)g**	(ð)Vg
gVk				
fVk	fVk	vVg	**v(V)g**	vVg
dʒ(V)k?	kk	k	k	k
s(V)k	sk	sk, **z(V)g**	st, zg	st, zg
mVk				
nVk	nVk	**n(V)g**	ng	ng
lVk	lVk	**l(V)g**	lg	lg
rVk	rVk	**r(V)g**	rg	rg
pVd	pVd	bVð	**b(V)ð**	bV(ð)
tVd	tVd	dVð	dV(ð)	dV(ð)
kVd	tsVd	dzVð	dzV(ð)	dzV(ð)
bVd				
dVd				
gVd				
fVd				
(dʒ)Vd	Vð	Vð	V(ð)	V(ð)
sVd				
mVd	mV(d)	mV	mV	mV

nVd				
l(V)d	ld	ld	ld	ld
r(V)d	rd	rd	rd	rd
pVn	pVn	bVn	**b(V)n** (> n?)	bV(n)
tVn	tVn	dVn	**d(V)n** (> nd)	dV(n)
kVn	kVn	gVn	**g(V)n** (> n)	gV(n)
bVn	vVn	vVn	vVn	vV(n)
dVn	dVn	ðVn	**ð(V)n** (> nd?)	ðV(n)
gVn				
fVn	fVn	vVn	vVn	
tʃVn	tsVn	dzVn	**dz(V)n**	dzV(n)
(dʒ)Vn	Vn	Vn	Vn	V(n)
sVn	sVn	**z(V)n**	zn	zn
mVn	mVn	mVn	**m(V)n** (> mbr)	mV(n)
nVn				
lVn	lVn	**l(V)n**	ln	ln
rVn	rVn	**r(V)n**	rn	rn
pVl	pVl	bVl	**b(V)l**	bV(l)
t(V)l	kl/kkl	kʎ/ʎʎ	ʎ	ʎ
k(V)l	kl/kkl	kʎ/ʎʎ	ʎ	ʎ
bVl	**b(V)l**	bl/vl	bl/ll	l/vV(l)
dVl	dVl	ðVl	**ð(V)l**	ðV(l)
g(V)l	gl/ggl	gʎ/ʎʎ	ʎ	ʎ
fVl				
tʃVl	tsVl	dzVl	**dz(V)l**	dzV(l)
(dʒ)Vl	Vl	Vl	Vl	
sVl	sVl	**z(V)l**	zl	zl (>lj)?
mVl	**m(V)l**	m(b)l	mbl	mbr
nVl				
lVl	lVl	**l(V)l**	ll	ll
rVl	rVl	**r(V)l**	rl	rl
pVr	pVr	**b(V)r**	br	br
tVr	tVr	**d(V)r**	dr	dr
kVr	kVr	**g(V)r**	gr	
bVr	vVr	**v(V)r**	br	vr
dVr	dVr	**ð(V)r**	ðr	**(**ð)r
gVr				
fVr	fVr	**v(V)r**	br	vr
tʃVr	tsVr	**dz(V)r**	dzr	(dz)r
(dʒ)Vr	Vr	Vr	Vr	Vr

sVr?	sVr	zVr	zVr	zVr
mVr	mVr	**m(V)r**	mbr	mbr
nVr	nVr	**n(V)r**	ndr, rn	nr
lVr	lVr	**l(V)r**	ldr	lr
rVr	rVr	**r(V)r**	rr	rr

Although it is maybe possible to refine some of the above reconstructions (e.g. whether a syncope such as /rVr/ belongs only to Hispano-Romance or to Proto-Romance or perhaps Proto-Western Romance as well), this task is out of the scope of the present study.

It is striking that /tVt/ and /pVt/ apparently syncopated quite early (i.e. before lenition)[125], and /kVt/ did not. Compare the frequences of the following Classical Latin word-medial CC sequences in the table below.

Table 95 **Word-medial CC frequency in Classical Latin (adapted from Devine and Stevens 1977: 181)**

Phoneme	Frequency	Phoneme	Frequency	Phoneme	Frequency
pp	117	pt	336	pk	0
tp	0	tt	121	tk	0
kp	0	kt	906	kk	88
sp	82	st	829	sk	244
mp	380	nt	2040	nk	108
lp	20	lt	491	lk	31
rp	109	rt	1103	rk	264

[125] This analysis has included all data traditionally considered native and etymologically safe. Again, the known occurrence of syncopes after labials (i.e. CREPITA > I *gretta*) and dorsals in Italian (i.e. *ficcare*) may suggest that these forms are Italianisms.

Of all CC sequences above, the frequency ranking is observed: /nt/ > /rt/ > /kt/ > /st/ > /lt/ > /mp/ > /pt/ > /rk/ > /sk/ > /tt/ > /pp/ > /rp/ > /nk/ > /kk/ > /sp/ > /lk/ > /lp/ > /tp/, /kp/, /pk/, /tk/. In this ranking, the coronal /t/ occurs the most frequently as C_2, and the noncoronals /p/ and /k/ the least frequently as C_2. The sonorants and /s/ occur the most frequently as C_1, followed by the noncoronals. Outside of the geminates /tt/ and /dd/, coronal C_1s are excluded.

Of all occurring heterorganic stop + stop sequences, /kt/ is the most frequent, and /pt/ is the least frequent. With respect to geminates, the frequency ranking /tt/ > /pp/ > /kk/ is observed. With respect to /s/ or sonorant + stop sequences, the following frequency ranking obtains: /nt/ > /rt/ > /st/ > /lt/ > /mp/ > /rk/ > /sk/ > /rp/ > /nk/ > /sp/ > /lk/ > /lp/.

Given that /kt/ is more frequent than /pt/, it might be expected that syncope of /kt/ be more favored than that of /pt/. However, the converse is observed. Why should there be more constraints on syncope leading to dorsal (or palatal) codas than those leading to labial codas? For example, *CREP(I)TA 'slit' was apparently wellformed early on, yet *PLAC(I)TU 'period' was not.

It is known that inherited velar codas (i.e. /kt/, /gn/) vocalized to [j] in Hispano-Romance, e.g. FACTU > *hecho/feito* 'do-PP', LIGNU > **lejno* > *leño/lenho* 'wood'. This change did not apply in the context /kVt/, e.g. PLACITU > *plazdo/prazo*, ***plecho/preito*[126] 'term'. Labial codas were also prone to assimilation early on, e.g. SEPTE > *[sɛtte] > *siete/sete* 'seven'. Therefore, early Hispano-Romance prohibited place in coda. Given that labial codas were as illformed as dorsal codas at this stage, it is not surprising that the

[126] This restriction on dorsal codas early on in Hispano-Romanceis contrasts with French, which shows very early syncope here, cf. PLACITU > * PLACTU > *plait,* cf. FACTU > *fait.* Here it is clear that /t/ had not yet voiced to /d/ at the time of syncope.

above predictions fail to hold for syncope. It is also probable that palatalization in such forms as PLACITU (> *[platʃitu]) disfavored syncope. Otherwise stated, palatal codas and sequencs containing palatals would have been less favored than those containing velars because such sequences did not occur at all at this stage.

Furthermore, consider the following forms.

(95) Coronal versus noncoronal codas from syncope

/pVd/	(syncope)	LAPIDE	*labde*	‘gravestone’
/tVd/	(deletion)	NITIDU	*nidio*	‘clear’
/kVd/	(deletion)	SUCIDU	*suzio*	‘dirty’

Forms continuing /pVd/ like *cobdicia* and *labde* underwent syncope, while forms containing the other stops followed by /d/ (i.e. /tVd/) did not. Again, syncope between the two coronals in a form like NITIDU would be expected to occur earlier than in forms like LAPIDE. The absence of syncope in SUCIDU is easier to explain. As in PLACITU, the palatal here could have prevented syncope, i.e. SUCIDU (> *[sutʃidu]). Comparison of NITIDU (> *nidio*, ***ne(d)do* ‘bright’) to PĒDITU (> **peddo* > *pedo* ‘fart’) and MĀTUTĪNU (> *matino* ‘morning’) suggests that syncope was favored between identical segments.

What we can conclude from this chapter is that there is a hierarchy of place feaures on C_1 according to how much they favor syncope. Syncope is most favored when C_1 was a sonorant or sibilant. Because all sonorants but /m/ were coronal, a metaeffect is that syncope occurred with greater frequency after coronals than after noncoronals. However, it is clear that syncope occurred to a greater extent after noncoronal obstruents, cf. OCULU > *ojo/olho* ‘eye’, but RETINA > P *redea,* ***redna* ‘rein’. This is the case because, as Table 25 shows, preconsonantal coronals were very constrained (cf, the Latin

Cluster/Coda Condition and Preconsonantal Coronal Decolorization Principle, Section 1.5).

In Table 23, all dorsals are grouped together to show syncope patterns, yet it should be noted that the earliest clear cases of syncope involve /k/ and /g/ before back vowels, e.g. OCULU 'eye', TEGULA 'tile' etc. The rest of the data includes only front vowel contexts, e.g. PLACITU 'term', SUCIDU 'dirty', -AGINE, etc. In the case of /g/, voiced obstruent deletion always bled syncope, with the sole exception of early cases of /gVk/ syncope. As for /k/, it is clear that syncope occurred only before liquid and, though later, before /t/. The failure of syncope before /d/ in both Spanish and Portuguese could be due to an interaction with obstruent deletion.

In any case, the absence of syncope of /ts/ and /dz/ in all contexts except before coronal stop or /r/ suggests that syncope only occurred when the coda condition was not violated. It seems possible that /dz(V)r/ was tautosyllabic. The fact that /d/ (e.g. HEDERA > *e(d)ra*) and /dz/ both deleted before /r/, seems to support this assertion.

The occurrence of syncope of /dz/ before /d/ but not before /n/ or /m/ (e.g. /dzn/) in Portuguese demonstrates that the output /dzd/ was better formed than /dzn/, etc. This offers support to the claim that similarity favors syncope, i.e. C_1 and C_2 were both voiced coronal obstruents at the time of syncope. If one takes into account that this sequence either simplified to already existing /dz/ or became some other complex segment in both Spanish and Portuguese, then it appears that the ulimate output, rather than the immediate sequence at the deletion site, can determine the wellformedness of syncope targets.

Did the retention of the sequence /dzd/ in early Spanish and Portuguese, e.g. *plazdo*, however brief, imply a direct violation of the coda condition? In Spanish, it is clear that later on *judgar* did. Perhaps the admission of complex segments such as /dzd/, regardless of their underlying status, somehow led to a gradual breakdown in surface phonotactic constraints.

(96) Gradual acceptance of /dz/ and /d/ in syllable coda

✓pladz.(d)o	(PLACITU ‘term’)		
*diedz.mo	(DECIMU ‘tithe’)	*l(e)íd.mo	(LEGITIMU ‘pretty’)
*ro.dedz.no	(ROTICINU ‘wheel’)	*ried.na	(RETINA ‘rein’)

It is significant that both /ts/ ~ /dz/ and /s/ ~ /z/ seem pattern with the sonorants as acceptable codas. Perhaps the acceptance of the sibilants was aided by their high acoustic energy (i.e higher sonority). This was also the case in word-final position. In word-medial position, however, since another consonant always follows these two obstruents, is is not entirely surprising that there were cooccurrence restrictions (to the greatest extent in Portuguese). What is interesting is that the restrictions on what could follow /s/ were much more lenient, cf. *asno, mesmo*.

CHAPTER 5

SYNCOPE IN SPANISH AND PORTUGUESE: $C_1C_2VC_3$ SEQUENCES

5.1. Introduction

In this chapter, the syncope of original $C_1C_2VC_3$ strings is examined. *A piori*, the immediate output could syllabify as complex coda [$C_1C_2.C_3$] or complex onset [$C_1.C_2C_3$]. Based upon the phonotactic generalizations established in Chapters 2 and 3, an approximate (or liquid) C_3 is required for the syllabification of any C_2C_3 as a complex onset (sibilant/(non-liquid) sonorant + obstruent + liquid, e.g. *entrar* 'enter'). Otherwise, when C_3 was a nonappoximate, only a complex coda C_1C_2 was possible (consonant + /s/ + obstruent, e.g. *perspe(c)tiva* 'perspective').

After a brief exposition of the data, we examine environments in which C_2 is a stop. In the case of syncope, these sequences normally deleted C_2, when a complex coda would have emerged, i.e. $C_1(C_2)C_3$. Next, we will look at cases where C_2 was the sibilant fricative /s/, in which case C_1 normally deleted. When C_2 was a sonorant, syncope does not occur unless C_1C_2 constitutes a geminate. The greater resistance of sonorant sequences to syncope is due to phonotactic restrictions on $C_1(C_2)C_3$.

When C_2 was a stop, C_3 could be an obstruent, nasal, or liquid. By examining the effect of the C_3 on the syncope of similar C_1C_2 sequences, e.g. /spp/, /spt/, /spf/, /sps/, /spn/, /spl/, etc. we can put to test the hypothesis that similarity between the two segments coming into contact plays a role in syncope. In the same way, keeping C_3

constant, while altering C_1, allows the comparison of similar but not identical C_1C_2 sequences, e.g. /spp/, /mpp/, /rpp/, etc.

Just as our study of C_1C_2 sequences categorized the coda on the basis of the place of C_1, $C_1C_2C_3$ sequences are analyzed below with respect to the place of the second coda consonant, i.e. C_2.

5.2. Syncope after a labial C_2.

As was discussed in § 4.8, syncope after labials is more restricted than syncope after coronals and dorsals. In the following forms, syncope appears to have occurred in both Spanish and Portuguese, producing a CCC sequence at deletion site. Although all contexts contain a sonorant or sibilant C_1, C_3 could be either a sonorant (*COMPERĀRE) or obstruent (COMPUTĀRE).

Table 96 **Syncope after Labial (Spanish and Portuguese)**

a. Pretonic syncope

mpVt	COMPUTĀRE	*contar*	*contar*	'count, tell'
mpVl	POMPELŌNE	*Pamplona*		(place name)
mpVr	*COMPERĀRE	*comprar*	*comprar*	'buy'
mbVl	AMBULĀRE?[127]	*andar*	*andar*	'walk'
mbVr	*EXCOMBORĀRE	*escombrar*		'remove debris'
lbVk	*VOLVICĀRE	*volcar*	*volcar*	'turn over'

[127] The literature also proposes AMBITĀRE.

b. Posttonic syncope

lbVt	*VOLVITU	*vuelto*	*volto*	'(re)turned
lfVr	*SULFURE[128]	*sufre/azufre*	*enxofre/eyxufre*	'sulfur'
rf.k	FORFICE	(*La) Huerce*		(place name)

In the following forms, syncope occurred only in Spanish

Table 97 **Syncope after Labial (Spanish)**

a. Pretonic syncope

mpVr	TEMPERĀRE	*temprar*	*temperar*	'temper, allay'
	TEMPORĀNU	*temprano*	*temporão*	'early'
mbVl	UMBILĪCU[129]	*ombligo*	*umbigo*	'belly button'

b. Posttonic syncope

lm_n	CULMINE	*cumbre*	*cu(i)me*	'peak'

In the following forms, syncope clearly failed to take place in both Spanish and Portuguese. In these contexts, C_1 and C_3 were could be sonorant or obstruent.

Table 98 **No Syncope (Spanish and Portuguese)**

[128] CL *sulfur/sulp(h)ur* (neut.). Word appears late in Portuguese (16th century). OS *sufre* prevails till slowly replaced by *açufre* in the 16th century. In the 14th century examples I examined *(en-)xufre* over modern *enxofre* prevails. DCE believes the Spanish variant with /u/ (aside Cat *sofre*) to be partially learned (cf. *dulce*).

[129] *embigo/imbigo* in OPg (see imbilīcu), presumably all remodeled with the prefix *en-/in-; umbrigo* appears in 16th century (DELP). Catalan shows dissimilation of labial, and a fused article, e.g. *l'omelic, lo melic* (GDLC).

a. Pretonic non-syncope

spVt	HOSPITĀRĪ	*hospedar*	*ospedar*	'host'
spVr	SUSPĪRĀRE	*suspirar*	*suspirar*	'sigh'
mpVk	*(RE)LAMPICĀRE	*relampagar*[130]	*lâmpado*	'lightning'
lmVk	AR *al-mukārī*		*almocreve*	'driver'
lmVd	AR *al-madīna*	*almedina*	*almedina*	'city'
lmVg	AR *al-mugāvār*	*almogávar*	*almogávar*	'troop'
lmVr	AR *al-murābit*	*almorávida*	*almogávar*	'guard'
rbVn	*TURBINĀRIA	*tolvanera*		'whirlpool of dust'
rbVr	ARBORĒTU	*arvoredo*	*arvoredo*	'arboretum'
rmVt	DORMITORIU	*dormidero*		'sleepy, dormitory'
rmVd	GC *Vermudini*		*Vermoim*	(name)
rmVg	GC *Ermegildi*		*Ermegilde*	(name)
rmVs	GC *Ermesindi*		*Ermesindi*	(name)
rmVn	CARMINĀRE	*carmenar*		'comb'

b. Posttonic non-syncope

spVt	CĒSPITE	*césped*	*céspede*	'lawn'
	HOSPITE	*húesped*	*hóspede*	'guest'
spVl	MESPILU	*niéspero*	*nespera*	'medlar-tree'
spVr	ASPERU	*áspero*	*áspero*	'bitter'
	VESPERA	*viéspera*	*véspera*	'eve'

[130] Etymology proposed by DCE. OP also has *lâmpado*.

mpVn	PAMPINU	*pámpano*		'grape leaf'
rpVr	PURPURA	*pórpora/pórpola*		'purple'
rbVt	ARBUTU[131]	*(a)borto*	*ârvedo*	'strawberry-tree'
rbVr	ARBORE	*árbol*	*árvor(e)*	'tree'
rfVr	FURFURES[132]	*fórfolas*		'ringworm'
rmVn	VERMINE	*bierven*		'vermin'
rmVr	MARMORE	*mármor*	*mármor*	'marble

After a geminate obstruent, syncope typically occurred when a liquid followed. In the forms below, syncope occurred in both Spanish and Portuguese, producing a CCC sequence at deletion site.

Table 99 **Syncope after geminate obstruent (Spanish and Portuguese)**

a. Pretonic syncope

ffVr	*OFFERESCERE[133]	*ofrecer*	*of(e)recer*	'offer'
	*SUFFERĪRE	*sofrir*	*sofrer*	'suffur'

b. Posttonic syncope

ppVl	*CAPPULA[134]	*cacha*		'hilt'

After a geminate sonorant, syncope appears to have occurred only in Spanish.

131 CL variant of ARBUTUS. San Isidro employed another variant ERBITUS, apparently influenced by HERBA 'herb' (DCE), which may be the source of the Portuguese forms. The Spanish form shows early metathesis and stress shift which impeded voicing and possibly syncope.
132 The word meaning 'chaff, bran' in CL makes its debut for Spanish in a late 15th century medicinal text (*Gordonio*).
133 OP *oferir/oferer* attested early on, and may have influenced the development of the inhoative here.
134 CL CAPULUS 'hilt'.

Table 100 **Syncope after geminate sonorant (Spanish)**

a. Pretonic syncope

mmVs	SUMMU SALTU	*Sansoto*		(place name)

b. Posttonic syncope

mmVl	FLAMMULA	*Flambla*[135]		(place name)
	MAMMULA	*mambla*	*mâmoa*	'rounded hillock'

5.2.1. **Syncope between labial stop C_2 and an obstruent C_3**

In Latin, only voiceless stops could occur after /s/. Otherwise stated, if C_1 was /s/, and C2 was a stop, C_2 was always voiceless, e.g. /sp/, */sb/. There is pretty strong evidence that /spt/ was not a possible output of syncope (e.g. CĒSPITE > *césped(e)*, HOSPITE > *huésped/hóspede*). However, HOSPITĀLE (> *hostal*), despite its probable Gallo-Romance origin (DCE), is often cited in support of pretonic syncope in this context (Pensado-Ruíz 1984). Since there is absolutely no support for the effect of word position anywhere else, the fact that /sp/ could not precede another consonant (i.e *spC) in clearly native words alone seems substantial to establish this constraint. However, there is in fact more evidence that /sp/ could not occur before other consonants such as /r/, discussed in § 5.2.2 below.

(97) *spC

Syncope leading to a sequence containing /sp/ always fails to occur. In contrast, /st/ (pretonic) and /sk/ (posttonic) are possible outputs of syncope (see also

[135] Castille, 915 (ORIG, 311).

below). This, at least tentatively, suggests that a labial C_2 is to some degree disfavored when preceded by /s/. Recall the findings above, which also support the greater markedness of labial place.

After the nasal /m/, both /p/ and /b/ could occur in Latin. The sequences /mp/ and /mb/ appear to syncopate before (coronal) stops (e.g. COMPUTĀRE > S/P *contar*, and, if the etymology is correct (see below), AMBITĀRĒ > S/P *andar*[136].

The *communis opinio* seems to be that forms like *contar*, containing a voiceless stop, are really cases of perseverative or carry-over voice assimilation of the first stop, e.g. COMPUTĀRE > *[kompudar] > *[kompdar] > *[komptar] > *[komtar] > *contar* 'tell' (e.g. Penny 1991: 77). The presence of unsyncopated forms such as *cuémpetet* for *cuenta* 'count-3SG' in early Spanish (*Glosas Emilianenses*, c. 950) as well as other peninsular forms with voicing (e.g. S/P *(o)bispo* ~ C *bisbe*) both suggest that syncope after CC sequences was quite late in Hispano-Romance. Furthermore, forms like *vendegar* also still occur in early Spanish authors such as Berceo (14th century).

> La síncopa de *masticare* > *mascar* no se debe interpretarse como muy temprano, según se ha hecho, sino más bien como regresión de *mastgar*, es el mismo caso de *contar* y *Salamanca* comp. cat. oc. *mastegar*, gall. port. *mastigar* junto con el portugués *mascar* (DCECH).

Thus the development is thought to involve perseverative or progressive voicing assimilation, i.e. from C_1 to C_2, e.g. MASTICĀRĒ > *[mastigar] > *[mastgar] > *[mastkar] > *mascar.* Pensado-Ruíz (1984) seems to reject this account, on the grounds of the lack of phonetic naturalness of such a sound change in Romance.

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[136] This etymology is proposed by REW, but contested by DCE, instead in favor of AMBULĀRE.

> El mayor inconveniente de esta explicación es que no hay ningún caso parecido de influjo de una consonante que se pierde en romance sobre otra en posición implosiva (Pensado-Ruíz 1984: 296).

By the twelfth century there are already numerous instances of syncope, e.g. COMPUTĀRE >*contar,* SALAMANTICA >*Salamanca*, etc. On this account, if one accepts the etymology, the carry-over voicing or retention of voicing in AMBITĀRĒ > *[ambidar] or *[ambitar] > *[ambdar] > *[amdar] > *andar* is also explained.

If analogy with *–ig-* or *–eg-* is not involved, the development *(RE)LAMPICĀRE[137] > OS *relampagar* could suggest that such syncope failed to occur before a noncoronal. Due to the absence of other similar forms occurring, however, it is not clear what really happened before noncoronals.

If syncope failed to occur after /s/ + labial (e.g. HOSPITE > *huésped/hóspede* 'guest'), but occurred after nasal + labial (e.g. COMPUTĀRE > S/P *contar* 'count'), then there ought to be a fifty-fifty chance that syncope occurred also after liquid + labial. Starting with cases in which C_1 is /l/, the development *VOLVITĀRE > *voltar* '(re)turn' or *VOLVITU > *vuelto* 'returned' is often found in the historical literature (e.g. Pensado-Ruíz (1984). However, in light of the arguments just presented for the relative lateness of syncope in forms like *contar, (o)bispo*, it seems highly unlikely that already by the origins of both these languages, as well as in other Romance languages (e.g. C *vòlt*, I *volto*), such forms were already consummated.

As mentioned in the discussion of /lVt/ in § 4.3.1, some early literature takes as a point of departure for early Romance the participles *SOLTU, *VOLTU, based upon the reflexes of these forms in other areas (e.g. Meyer-Lübke 1895: 421; Grandgent

[137] Etymology proposed by DCE. OP also has *lâmpado*.

1907: 185). However, it is not entirely clear whether such short forms are the result of syncope of remade *SOLVITU, *VOLVITU. If this is the case, then these forms are at odds with the proposal that syncopes like COMPUTĀRE are quite late. Furthermore, syncope of *SOLVITU, etc. would have yielded ***sol(v)do* either by the putative perseverative voicing assimilation mechanism *[solvto] > **[sol(v)do] or by syncope after voicing, i.e. *[solvidu] > **[sol(v)do], cf. OS *vendegar* > *vengar* 'avenge'.

There is another reason for rejecting this accont. It is unlikely that syncope leading to /l(b)t/ (e.g. *SOLVITU > *suelto/solto*) occurred earlier than that leading to /lt/, (ANHĒLITU > *anelḏo* 'breath'). In my opinion, this is a fact irreconcilable with the evidence given above in support of either uniform or slightly later syncope of CCVC sequences in relation to CVC sequences. Furthermore, it is not clear why VOLVITU (> *vuelto/volto* 'returned'), and not CĒSPITE (> *césped*/*céspede* 'lawn', ***ceste*), should have undergone syncope, for it is known that syncope leading to /st/ (e.g. POSITU > *puesto* 'put') was earlier than that of /lt/.

If not products of syncope, where then did the reconstructed forms *SOLTU, *VOLTU come from? In light of the implausibility of such early syncopes of complex codas with a labial C_2, it is likely that these participles are analogical. In § 5.4.1, after discussion of verbal stems ending in a dorsal, an account of the development of these verbs is given.

As for /r/, examination of /rp/ and /rb/ reveals that both sequences failed to undergo syncope after these sequences. The Spanish reflex of ARBUTU, *(a)borto,* shows very early metathesis and stress shift, which impeded syncope and voicing. The Portuguese form *êrvedo*, however, clearly did not syncopate.

Furthermore, deletion of /d/ bleeds syncope after /Cp/ and /Cb/ sequences, LIMPIDU > *limp(i)o* 'clean', ***lendo*, TURBIDU > *túrvio/turvo,* ***tordo,* cf. VIRIDE > *verde* 'green'. Recall that post-liquid syncope was favored earliest by following /d/. This informs us that voiced obstruent deletion bled any potential syncope here.

It follows from the above discussion that syncope after a labial C_2 occurred only when C_1 was /m/ (*contar*), and here it seems syncope occurred quite late, i.e. after obstruent voicing and deletion.

5.2.2. **Syncope between labial stop C_2 and a sonorant C_3**

Despite the very few examples of syncope or lack thereof before a nasal, several generalizations emerge. While /mp/ syncopated before an obstruent (COMPUTĀRE > S/P *contar* 'count'), /mp/ resisted syncope when a nasal followed (e.g. PAMPINU > OS *pámpano*, ***pampno* 'grape leaf'). Furthermore, the Spanish form *tolvanera* 'whirlpool' (< **torvenera* < *TURBINĀRIA) also was apparently not subject to syncope. Since of all CC sequences, /mp/ and perhaps /mb/ seemed the least resistant to syncope, these facts suggest that sonorant + labial sequences (e.g. /mp/, /mb/, /rb/, etc.) failed to syncopate when a nasal followed. This parallels the constraint against labial + nasal (i.e. /bn/, /vn/, etc.), e.g. JUVENE > *joven/jóvem,* ***jovne* 'young'.

(98) *mPN

> Syncope leading to a complex coda containing /mp/ or /mb/ followed by a nasal always fails to occur.

When a liquid followed a sonorant + consonant sequence, however, syncope could occur in both languages, e.g. POMPELŌNE > *Pamplona* (place name), *COMPERĀRE > *comprar* 'buy', AMBULĀRE? > *andar* 'walk', and *EXCOMBORĀRE > S *escombrar* 'remove debris'. After /sp/, however, syncope apparently failed to occur before a liquid, e.g. *niéspero*/*nespera* 'medlar-tree' (< MESPILU), *v(i)éspera* 'eve' (< VESPERA), and *áspero* 'bitter' (< ASPERU). In light of the nonoccurrence of syncope after /sp/ when an obstruent followed, it is not surprising that syncope failed to occur here as well.

Syncope also failed to occur between /rp/, /rb/ and a following /r/, e.g. PURPURA > OS *pórpora/pórpola* 'purple', ARBORE *árbol/árvor(e)* 'tree'.

(99) *rCr

> Syncope leading to CCC sequences containing two rhotic segments always fails to occur.

Moreover, other /rCVC/ sequences resist syncope, e.g. LL CARDINU[138] > *cárde(n)o* 'blue' CIRCINĀRE > *cerce(n)ar* 'cut (at the root)' strongly suggesting more general phonotactic contraint against rhotic + consonant + sonorant sequences (*rCR). See § 5.3.4 and § 5.4.2.

The absence of syncope in strings containing two /r/ segments (cf. TURTURE > *tórtora/tórtora* 'turtle-dove', FURFURES[139] > *fórfolas* 'ringworm'), is similar to the constraint on syncope leading to *mPN, e.g. PAMPINU > OS *pámpano* 'grape leaf'.

[138] Derived from CARDUS 'cactus', and attested in 5th century Christian Latin (DCE).
[139] The word meaning 'chaff, bran' in CL makes its debut for Spanish in a late 15th century medicinal text (*Gordonio*).

Both constraints miliate against adjacent similar segements (OCP): either nasal + nasal or rhotic + rhotic. See § 5.3.4 for more discussion.

5.2.3. **Syncope between labial fricative C_2 and an obstruent C_3**

The only example here is /rfVk/, where syncope occurred in Spanish, FORFICE > *La Huerce* (place name). To my knowledge, this is the only case of syncope after /r/ followed by a labial in Hispano-Romance. In spite of the occurrence of syncope in this example, Pensado-Ruíz (1984) states that syncope fails to take place in Spanish after any */rC/, regardless of whether an obstruent or sonorant followed. Just as syncope leading to /mC/ fails in certain contexts (§ 5.2.2), syncope leading to /rC/ fails only in presonorant contexts. If this account is correct, the occurrence of syncope after a sonorant + fricative sequences followed by an obstruent (e.g. /rfVk/) is explained, since only before a sonorant would syncope fail to occur (e.g /rfVr/, /rfVn/, etc.).

5.2.4. **Syncope between labial fricative C_2 and a sonorant C_3.**

The only case of syncope between a labial fricative and sonorant is /lfVr/, where syncope before /r/ clearly occurred in both languages, e.g. SULFURE > *sufre/enxofre* 'sulfur'. This demonstrates that syncope after /rC/, but not /lC/, is subject to constraints before /r/ or another sonorant.

5.2.5. **Syncope after a labial nasal C_3**

In Latin, the only heterosyllabic C_1C_2 sequences containing a C_2 sonorant were /gm/, /gn/, /lm/, /ln/, /rm/, and /rn/. Of such sequences, however, only /lm/ and /rm/ occur in our data set (e.g. CULMINE > *cumbre/cuime*, CARMINĀRE > OS *carmenar* 'comb'). Assuming that this was the situation in early Hispano-Romance, it is clear that when C_2 was a sonorant in Latin, it could only be preceded by another sonorant, e.g. /lm/, /rm/, /ln/, /rn/, etc[140].

In the case of /lm/, the vocalization of the syllable–final lateral here interacts with syncope, e.g. CULMINE > *cumbre/cuime* 'peak. In Spanish , the velar quality of the /l/ is apparently absorbed by the back vowel. The syncope which took place is like any other /mVn/ syncope. In Portuguese, however, the resulting [w] dissimilated to [j], and syncope failed to take place, which, in any case, is no surprise, since /mVn/ did not syncopate in Portuguese.

Another source of /lm/ in Hispano-Romane are loanwords from Arabic (e.g. *almedina, almogávar, almorávida*, etc.). In these forms, syncope fails to occur regardless of what consonant follows /lm/. However, it is not clear whether the lack of syncope here is due to the late, learned entrance of these words.

It is difficult to determine for what reasons syncope failed to occur after /rm/. Before an obstruent, the sole native Spanish example *dormidero* 'bedroom' (< DORMITORIU) is of little value due to the noun's relationship with *dormir* 'sleep'. In Portuguese, Germanic borrowings presenting /rmVd/, /rmVg/, and /rmVs/ show no

[140] This does not apply to the quite limited sequence /gn/.

syncope, but the retention of the voiced stops in some of these Germanic forms make it hard to determine exactly when these forms entered.

In the case of /rmVn/, the lack of syncope in OS *bierven* 'vermin' (< VERMINE*)* could be due to either dissimilated /rb/ or /rm/. Recall that /rb/ shows no signs of syncope whether before obstruent or sonorant. The penultimate stress of the present tense of OS *carmenar* 'comb' (< CARMINĀRE) may have interfered with the regular development of this verb, i.e. *carmẹna*, etc. Stem allomorphy involving syncope is not tolerated in Hispano-Romance.

Excluding sequences which had already simplified or assimilated (e.g. /gn/, /lm/, /mn/), when a C_2 sonorant, preceded by a consonant, did not constitute a geminate, syncope appears to have been blocked. Unlike with a stop C_2, the nasal C_2 here apparently was not deletable, for which had syncope occurred it would have produced an illicit complex coda, e.g. VERMINE > *[bjerm.ne] or *[bjerm.bre].

Syncope after /rm/ failed to occur when another /r/ followed, e.g. MARMORE > OS/OP *mármor,* P *mármore,* ***mar(m)bre* 'marble'. This could be a product of this constraint. However, the nonoccurrence of syncope elsewhere (e.g. TURTURE > OS *tórtora,* ***tortra* 'turtle-dove', etc.) is attributable to the mentioned constraint on two-/r/ sequences, i.e. */rCr/.

5.2.6. Syncope after labial geminate C_1C_2.

The only putative cases of syncope after a geminate labial obstruent are SUFFERIRE > *sofrir/sofrer* 'suffer' and CAPPULA > S *cacha* 'hilt'. The latter case of syncope after the geminate /pp/ suggests that syncope occurred prior to degemination. Had this not been the case, in light of POPULU > S *pueblo* 'people', ***cabla* would have ensued. Recall that postconsontal obstruent + /l/ sequences, whether primary or secondary, develop to palatals in Spanish and Portuguese, cf. AMPLU > *ancho* 'wide'.

On the basis of the different development of the sonorant geminates within the Iberian Peninsula, it is generally inferred that sonorant degemination was later than obstruent degemination (see D. Holt 1997). The distinct development of MAMMULA may reflect this, i.e. syncope was blocked in Portuguese *mâmoa* but not *combro* (< CUMULU) because the geminate was still intact in the former form.

The implications of this assertion are tested with coronal and dorsal geminates below.

5.3. **Syncope after a coronal C_2**

This section investigates syncope and non-syncope after a C_1C_2 sequence in which C_2 is a coronal. As is demonstrated below, such sequences were much more subject to syncope than sequences containing a labial C_2.

In the following forms, syncope occurred in both Spanish and Portuguese. Syncope here occurred with both sonorant and obstruent C_1 and C_3.

Table 101 **Syncope after Coronal (Spanish and Portuguese)**

a. Pretonic syncope

ksVk	*FĪXICĀRE	*fisgar*	*fisgar*	'harpoon'

ksVk	*PROXIMĀNU	*prosmano*		'close (ties)'
stVk	MASTICĀRE	*mascar*	*mascar*	'chew'
stVm	(AD)AESTIMĀRE	*a(e)smar/osmar*	*esmar*	'esteem'
stVn	PASTINĀCA	*bisnaca/biznaca*[141]		'wild carot'
stVl	FISTULĀRE		*fechar*	'close'
	VILLA USTULĀTA	*Villoslada*		(place name)
stVr	*PASTORANEA	*pa(s)traña*	*(patraña)*	'fable'
	*PASTORĀNU	*pastrano*	*pastrano*	'pastoral'
ntVp	*ANTEPARĀRE	*amparar*	*amparar*	'protect'
ntVk	*PLANTICĀRE	AL *allancar*		?
ntVb	*ANTEVĪSU	*anviso/ambiso*		'wise'
ntVf	GC *Antifonsu*	*An(t)fonso*		(place name)
ntVl	VENTILĀRE	*beldar/abellar*		'air grains'
ntVr	INTERANEA	*entraña*	*entranha*	'innards'
ndVk	PENDICĀRE		*pingar*	'drip'
	VINDICĀRE	*vengar*	*vingar*	'avenge'
ndVs	GC *Gundisalvu*	*Gonçal(v)o*	*Gonçal(v)o*	(name)
	GC *Gundesindi*		*Gon(do)sende*	(place name)
nsVt	CO(N)SŪTŪRA	*costura*	*costura*	'sewing'
	*CO(N)SUĒTŪMINE	*costumne*	*costume*	'custom'
	*MA(N)SUĒTĪNU	*mastín*		'mastif'
nsVl	CONSOLĀRE	*cueslo*		'consolation'
ltVr	ALTERU	*otro*	*outro*	'other'
	VULTURE	*buitre*	*abu(i)tor/abutre*	'vulture'
ldVf	GC *Aldefonsu*	*Alfonso*	*Alfonso*	(name)

[141] This form may be from Judaeo-Spanish *bištinâqa/bišnâqa*, cf. C *pastanaga*, OF *pasnaie*, OO *pastenaga*, OI/SD *pastinaca,* SI *vastunaca*.

ldVr	*BALDERĪNU	*Baldrín*		(place name)
rtVs	HORTU SACRU	*Usagre/Uzagre*		(place name)

b. Posttonic syncope

psVm	*MEDIPSIMU	*me(i)smo/mismo*	*mesmo*	‘same’
ksVm	*SEXIMA	*se(i)sma*	*se(i)sma*?	‘sixth part’
ksVl	GC *Cixila*	*Cisla*		(place name)
gnVr	PIGNORA	*pendra/prenda*		‘object of value’
st(l)	ASTULA[142] ESTULA	 *Esla*	*acha*	‘sliver’ (place name)
mnVk	DOM(I)NICA	*donga/duenga*[143]		‘lordly’
ntVk	PANTICE	*pança*		‘belly’
ntVl	*CIN(C)TULU	*cincho*		‘belt’
ntVr	DUM INTERIM	*domientre*	*(de)mentre(s)*	‘while’
ndVt	VENDITA? RENDITA?	*venda/venta* *renda/renta*	*venda* *renda*	‘selling’ ‘surrender’
ndVk	UNDECI	*onze*	*onze*	‘eleven’
ndVr	ALEXANDER	*Alexandre*		(name)
nsVk	*TRANSICA		*trasga* (dial.)	‘ring for yoking’
nsVl	INSULA	*i(n)sla*	*illa*	‘island’
rdVt	*PERDITA?[144]	*piérdida/perda*	*pérdeda/perda*	‘loss’
rdVk	QUATTUORDECI?	*catorze*	*catorze*	‘fourteen’

[142] Attested for CL ASSULA in the Late Latin of San Isidro. Not clearly attested in OP.
[143] Cf. the place names *la Cueva donga/Covadonga* (< *cova dom(i)nica*), *Araduenga* (Castille), *Viladóniga* (Galicia), ORIG (162-3).
[144] Both 13th century. DELP considers the word *perda* a back formation of *perder*, cf. *venda/vender* ‘sell’

rsVk	*VERSICU	*bizco*	*vesgo*	'cross-eyed'

Certain forms containing a sonorant C_3 were especially resistant to synope. The following forms present syncope only in Old Spanish.

Table 102 **Syncope after Coronal (Spanish)**

a. Pretonic syncope

ptVm	SEPTIMĀNA	*se(d)mana*	*(semana)*	'week'
ktVn	PECTINĀRE	*peinar/pendar*	*pentar*	'comb'
	*PECTINICULU	*pendejo*	*pentelho*	'pubic arch'
ktVs	GC *Tructesindu*		*Tru(i)tesendo*	(place name)
ktVm	GC *Tructemiri*		*Tru(i)temil*	(place name)
ktVr	LECTORĪLE[145]	*(l)atril*	*leytiril*	'lector'
	PECTORĀLE	*petral*	*peytural*	'breastplate'
kkVm	GC *reccemiri*		*reçomil*	?
gnVr	PIGNORĀRE[146]	*pendrar/prendar*	*penhorar*	'pawn'
ntVm	GC *Antemiri*		*Antemil*	(place name)
	GC *Gontemiri*		*Gontemil*	(place name)
ntVn	ANTENĀTU [147]	*annado/andado*	*anteado/enteado*	'step-son'
	GC *Gontinanis*		*Gontinhães*	(place name)
ndVb	GC *Gundibadu*		*Gondivao*	(place name)
ndVs	GC *Gundesindi*		*Gon(do)sende*	(place name)

145 NP *atril* < OS *(l)atril.*
146 OP *penhór(a)* 'pawned item', apparently with stress shift (DELP).
147 Cf. OS *annado/andado* and numerous other variants, presumably the result of remaking the noun with the prefixable adverb *an(te).* OF also remade the form (*ainzné*).

a. Posttonic syncope

ktVn	PECTINE	*peine/peinde*	*pente(m)*	'comb'
ksVn	FRAXINU	*fresno*	*freixo*	'ash'
ndVn	*LENDINA[148]	*liendre*	*lêndea*	'nit'
ndVl	AMYNDULA[149]	*almendra*	*amêndoa*	'almond'
	SCANDULA	*escanda/escaña*	*escândea*	'spelt'
ltVr	ALTERU	*otro*	*outro*	'other'
	VULTURE	*buitre*	*abu(i)tor/abutre*	'vulture'
rsVk	(MALU) PERSICU	*prisco*	*pêssego*	'peach'

As discussed in § 5.2, constraints against outputs in which C_1 and C_3 were both rhotics or both nasals impeded syncope. In the following forms, syncope failed to occur in both Spanish and Portuguese.

Table 103 **No Syncope (Spanish and Portuguese)**

a. Pretonic non-syncope

ndVg	GC **Indegundia*	*Ennegüenza*[150]		(place name)
ndVm	GC *Gundemari*		*Gondemar*	(place name)
ldVm	GC *Baldemiri*		*Valdemar*	(place name)
rtVt	PARTITŌRIU	*Partiduero*		(place name)
rtVk	MORTICĪNU	*mortecino*		'slaughter'
rtVn	GC *Bertenandi*		*Britiande*	(place name)

[148] CL LENS, -DIS. For Old Spanish, I only found two late 15th century examples in the RAE corpus; for Old Portuguese, DELP cites a 16th example.
[149] CL AMYGDALA.
[150] ORIG (161), León.

	*PERTINESCERE	*pertenecer*	*pert(e)encer*	'pertain'
rtVr	TURTURE	*tórtora/tórtola*		'turtledove'
rdVk	GC *Ardecanis*		*Ardegães*	(place name)
rdVn	GC *Tardinati*		*Tardenhade*	(place name)

b. Posttonic non-syncope

nsVr	A(N)SERE	*ánsar*	*ánsar*	'wild duck'
rdVk	LL MORDICU	*(al)muérdago*		'mistle-toe'
rdVb	CORDUBA	*Córdoba*		(place name)
rdVn	LL CARDINU	*cárdeno*	*cárdeo*	'blue'
	ŌRDINE[151]	*orden*	*ordem*	'order'

Syncope occurred after a geminate in the following forms in both Spanish and Portuguese.

Table 104 **Syncope after Geminate (Spanish and Portuguese)**

a. Pretonic syncope

ssVk	APPRESSICĀRE	*apriscar*		'shelter cattle'
	*MUSSICĀRE	*amusgar*		'lay back ears'
	*QUASSICĀRE	*cascar*	*cascar*	'deshell'
ttVr	LITTERĀTU	*letrado*	*letrado*	'educated'
llVk	CABALLICĀRE	*cabalgar*	*cavalgar*	'ride (a horse)'
	COLLOCĀRE	*colgar*	*colgar*	'hang'
llVg	COLLIGERE	*coger*	*colher*	'pick, take'

[151] Attested 12-13th centuries.

llVr	*FALLĪRA̲T	*faldrá*		‘will lack’
	*TOLLERA̲T	*toldrá*		‘will take’
rrVk	*IMBARRICĀRE	*embargar*	*embargar*	‘hinder’

b. Posttonic syncope

ssVl	ASSULA[152]	(*astilla*)	*acha*	‘sliver, splinter’
	PESSULU	(*pestillo*[153])	G *pecho*	‘lock’
	*SESSULU	*sielso/sienso*		‘pan’?
ttVl	CATTULU?	*cacho/cachorro*	*cachorro*	‘(fish), pup’
ttVr	LITTERA	*letra*	*letra*	‘letter’
llVt	PULLIT(E)RU	*poltro*	*poldro*	‘colt’
llVk	GALLICU	*galgo*	*gálego/galgo*	‘greyhound’
rrVl	*BURRULA	*borla*	*borla*	‘(wool) tassel’

In the following posttonic form, syncope failed to occur in both Spanish and Portuguese.

Table 105 **No Syncope after Geminate (Spanish and Portuguese)**

ssVr	PASSERE[154]	*páxaro*	*pássaro*	‘bird’

5.3.1. **Syncope between coronal stop C_2 and an obstruent C_3.**

Recall that the noncoronal stops /p/ and /k/ could precede /t/ in Latin. Another source of /kt/ are Germanic or Latinized Germanic place names, which abound in

152 This is form is attested as ASTULA in the Late Latin of San Isidro.
153 The Spanish form stems from a syncopated PESTLUM/PESCLUM (attested in ML glosses), from which a *PESTELLU (> S *pestilo*, C *pestell*, OO pestel ‘lock’) was remade (DCE).
154 AP PASSER NON PASSAR.

Portuguese, e.g. GC *Tructesindu* > *Tru(i)tesendo.* Original word-medial /kt/ developed to [jt] in Portuguese and then to [tʃ] in Spanish, e.g. FACTU > P *feito/*S *hecho* 'done'. Just as original /tVm/ and /tVn/, e.g. RETINA > *rienda/rêdea* 'rein' (§ 4.3.2.2), /ktVn/ syncopated only in Spanish, e.g. PECTINE > S *peine/peinde*, P *pente(m)* 'comb'.

Commutating C_1 in these coronal stop sequences with other attested segments (e.g. /s/, /n/, /l/ and /r/) allows us to test the effect of C_1 on syncope in this environment. Though there are very few cases to work with, the sequence /st/ appears to have syncopated before noncoronal stops, (e.g. MASTICĀRE > S/P *mascar*). In both Spanish and Portuguese, there is also evidence that the sequences /nt/ and /nd/ syncopated before both coronal and noncoronal stops (e.g. *ANTEPARĀRE > *amparar* 'support', *ANTEVĪSU > *anviso/ambiso* 'son-in-law', VENDITA > *venta/venda* 'sale', PANTICE > S *pança* 'gut', VINDICĀRE > *vengar/vingar* 'avenge'), fricatives (GC *Antifonsu* > S *Anfonso*, GC *Gundisal(v)u* > *Gonçal(v)o* and (though only in the case of Spanish as is discussed in § 5.3.4) nasals (ANTENĀTU > *annado/andado*, *LENDINE > *liendre*). Recall that the sequences /mp/ and /mb/ only syncopated before (coronal) obstruents. This agrees with the assertion that coronal is the least restricted place.

If the analysis of /RC/ stems in § 5.4.1 below is correct, syncope of /lt/ and /ld/ also occurred before (noncoronal) obstruents (e.g. *VOLTICĀRE > S/P *volcar* 'turn over' and GC *Aldefonsu* > S/P *Alfonso*).

The fact that Portuguese has syncope after /s/, /n/, or /l/ (e.g. MASTICĀRE > *mascar* 'chew'), yet not after a glide (i.e. [j]) or a vowel (e.g. GC *Tructesindu* > *Tru(i)tesendo,* –ÁTICU > *-ádego*), suggests that syncope was more likely to occur when a consonant preceded the coronal than when a vowel preceded (i.e. a C_1C_2 input sequence such as /Vt(V)k/).

(100) Nonoccurrence of syncope in postvocalic contexts (Portuguese), e.g. /t(V)k/

[VCVC]	-ĀTICU[155]	*–ádego*	(suffix)
[GCVC]	GC *Tructesindu*	*Tru(i)tesendo*	(place name)

(101) Occurrence of syncope in postconsonantal (CCVC) contexts (Portuguese), e.g. /Ct(V)k/

stk	MASTICĀRE[156]	*mascar*	'chew'
ndk	PENDICĀRE[157] VINDICĀRE[158]	*pingar* *vingar*	'drip' 'avenge'
ltk	*VOLTICĀRE	*volcar*	'turn'
ldf	GC *Aldefonsu*	*Alfonso*	(name)

Syncope of /rt/ and /rd/ appears to have occurred, but the only clear case for Spanish is before the coronal /s/, e.g. HORTU SACRU > S *Usagre/Uzagre* (place name). Although *PERDITA and QUATTUORDECI are often considered cases of syncope (e.g. Penny 1991), it is not clear whether analogy has entered the picture here (see Pensado-Ruíz 1984 for more discussion).

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155 S *–aje*, P *–agem*, I *–aggio* were borrowed from French.
156 According to DELP, *mascar* (15th century), *mastigar* (17h century) are attested, so the unsyncopated form appears to be a later borrowing of this word, with accommodation of the *–eg-/-ig-* infix (see Malkiel 1949).
157 This form is attested in the 15th century, possible contamination with PINGUE 'grease', i.e *pingo* 'droplet of grease'.
158 This form is attested in 13th Portuguese (DELP), and was borrowed into Basque (apparently from Spanish) very early on as *bendekatu/mendekatu* (DEC).

In all other forms containing /rt/ or /rd/, however, syncope failed to occur, e.g. OS *Partiduero, (al)muérdago.* In at least the last of these forms, it seems possible that analogy (i.e. with other *–ig-/-eg-* suffixed forms; see Malkiel 1949) may have interfered, e.g. **(al)muérd-ego*. Before sonorants, however, there are clear cases of /rt/ and /rd/ resisting syncope, e.g. *cárde(n)o* (discussed below in § 5.3.2).

5.3.2. **Syncope between coronal fricative C_2 and an obstruent C_3**

Recall that /ps/, /ks/, and /rs/ developed to simplex segments in Spanish and Portuguese, i.e. /ps/ > /ss/ > /s/, /ks/ > /js/ > /(j)ʃ/, and /rs/ > /ss/ > /s/. Thus /rs/ and /ss/ appear to have merged early on as /s/, cf. URSU > *osso* 'bear'. Just like syncope after simplex /s/, syncope after geminate /ss/ occurred in both languages, cf. RESECĀRE > *rasgar* 'rip' and *VERSICU > *bizgo/vesgo.*

If *FĪXICĀRE > *fisgar* 'harpoon' is a native Portuguese development, then /ks/ syncopated before a (noncoronal) obstruent in both languages. This sequence behaves differently from /kt/, which failed to syncopate in Portuguese, cf. *Tructesindu*. Furthermore, as is seen below in § 5.3.4, /ks/ eventually syncopated before /m/ (e.g. *SEXIMA > *se(i)sma* 'sixth'), while /kt/ did not (*Tructemiri* > *Tru(i)temil*). This demonstrates that, after a fricative, syncope was more likely than after a stop.

5.3.3. **Syncope between a coronal sonorant C_2 and an obstruent C_3**

There is only one case of syncope here involving /mn/, DOMNICA > OS *duenga*. Since original /mn/ developed to /nn/ in Hispano-Romance (SOMNU > *sueño/sono* ‘sleep’), and syncope occurred after /nn/ (e.g. CANNICA > OP *canga* ‘yoke’), it is possible that assimilation of /mn/ took place before syncope.

5.3.4. **Syncope between a coronal stop C_2 and sonorant C_3**

Though there are few cases of /pt/ and /kt/ to work with, it is clear that both /pt/ and /kt/ syncopated before nasals in Spanish (e.g. SEPTIMĀNA > *semana* ‘week’[159] and PECTINE > *[pejtene] > *[pejtne] > *peine* ‘comb’). Just as with /ks/ (§ 5.3.3), it is probable that these sequences were altered prior to syncope, i.e. /pt/ > /tt/ > /t/ and /kt/ > P /jt/, S /tʃ/. Cases such as DECIMA > *dízima* ‘tithe’, RETINA > *rêdea* ‘rein’ demonstrate that syncope failed to occur after a stop or affricate, regardless of whether intervocalic /n/ was lost. Secondary /t/ from /kt/ developed the same in Portuguese, e.g. PECTINE > *[pejtene] >*[pejte˜e] >*[pe˜jte] > *pente.*

The sequence /st/ does appear to syncopate in both languages before a nasal, e.g. AESTIMĀRE > *esmar*. Thus, after a consonant (e.g. /s/, /n/), syncope of a coronal was possible before a stop (§ 5.3.1, e.g. *mascar, vingar*) or before a nasal.

Before a liquid, however, /st/ did syncopate, e.g. FISTULĀRE > *fechar* ‘close’, *PASTORĀNU > *pastrano* ‘pastoral’. Recall that before /l/ and /r/, but not /n/, /t/ also syncopated in Portuguese, e.g. VETULU > *velho* ‘old’, VETERE > *vedro* ‘old’, but RETINA > *rêdea* ‘rein’. In contrast to /st/, /nt/ and /nd/ yield different results in Spanish and Portuguese, e.g. ANTENĀTU > OS *annado/andado*, OP *anteado/enteado*, LENDINE

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[159] In OP*, domada* (< HEBDOMADA) was the normal word for ‘week’. The absence of n-deletion in the modern word *semana* demonstrates that this word was borrowed from Spanish.

> *liendre/lêndea.* While syncope occurred in Spanish, sonorant deletion appears to have bled any potential syncope in Portuguese.

Recall that /nt/ and /nd/ could syncopate before obstruents in Portuguese (§ 5.3.1), e.g. ANTEPARĀRE > *amparar* 'support', etc. The absence of syncope of a coronal when preceded and followed by a nasal (e.g. ANTENĀTU > OP *anteado/enteado*, is another instantiation of the constraint on two-nasal sequences, i.e. *NCN.

The two-nasal sequences /ntn/ and /ndn/ did not develop uniformly in Spanish. In the case of /ntn/, it appears that deletion of the stop brought the two nasals together, which may have palatalized like other /nn/, e.g. ANTENĀTU > *[an(t)nado] > *annado* > *añado.* Another option, however, seems to have been retention of the stop and metathesis with the nasal, i.e. ANTENĀTU > *[antnado] > *[andnado] > *a(n)ndado*. This /nd/ ~ /nn/ alternation is seen elsewhere, e.g. CATĒNĀTU > *cadnado* > *candado/cannado* 'lock'. In contrast, /ndn/ dissimilates to /ndr/, e.g. LENDINA > *[ljendne] > *liendre* 'nit'. The development of this two-nasal sequence is identical to that of /mn/ (> /nr/, e.g. HOMINE > *omne/ombre* 'man'), reflecting the same constraint against a string of non-geminate nasals, i.e. *N(C)N.

The difference between Spanish and Portuguese, then, is not in the presence versus absence of a particular constraint such as *N(C)N, but rather in the strength of such a constraint in each language. In Portuguese, this constraint was inviolable, and syncope could not occur. In Spanish, however, although syncope overcame this phonotactic constraint, the subsequent alteration of the resulting two-nasal sequence demonstrates that this constraint was still not completely in *chômage*.

The occurrence of syncope between /nt/, /nd/ and a following nasal contrasts with the blocking of syncope in other two-nasal strings such as PAMPINU > *pámpano,* ***pampno* 'grape-leaf'. This contrast parallels the absence of syncope between a labial and nasal (e.g. JUVENE > *joven/jóvem,* ***jovne* 'young'), yet the occurence of syncope between coronal and nasal in Spanish (e.g. RETINA > *[rjedna] > *rienda* 'rein').

Before /r/, syncope of /nt/, /nd/, /lt/, and /ld/ could occur, e.g. INTERANEA > *entraña/entranha* 'innards', DUM INTERIM > *domientre/dementre(s)* 'meanwhile', ALTERU > *o(u)tro* 'other', VULTURE > *buitre/abutre* 'vulture', ALDERĪNU > *Baldrín.* Before /l/, however, there is only evidence of syncope in Spanish, e.g. AMYNDULA > *almendra/amêndoa* 'almond'. This parallels the development of learned words presenting /tVl/, e.g. CAPITULU > *cabildo/cabido*, except that in the case of Spanish, when a consonant preceded the coronal, metathesis was not possible, i.e. AMYNDULA *[almendla] > ***almelnda*. The unusual coronal + /l/ sequence was, however, rhotacized.

When /r/ followed /rt/, /rd/, however, syncope failed to take place, e.g. TURTURE > OS *tórtora/tórtola* 'turtle-dove'. Even when dissimilation of the liquids occurred, syncope failed to occur, i.e. ***tortra,* ***tortla*. This seems to suggest that any string containing /rC/ and a following liquid was ineligible for syncope. Otherwise stated, /r/ + consonant + liquid was illformed, i.e. *rCL. As discussed in § 5.2.2, this constraint is another instantiation of the OCP (the constraint on adjacent similar segments or features).

5.3.5. **Syncope between a coronal fricative C_2 and a sonorant C_3**

In both Spanish and Portuguese, developments like *MEDIPSIMU > *me(i)smo* 'same', *SEXIMA > *se(i)sma* 'sixth part', GC *Cixila* > OS *Cisla* (place name), and INSULA > S *isla*/P *ilha* 'island' demonstrate that /ps/, /ks/, and /ns/ undergo syncope like simplex /s/, before nasals and /l/.

The occurrence of syncope before /m/ seen in *sesma* 'sixth aprt' (< *SEXIMA) seems to defy the tendency for Portuguese not to syncopate before nasals, cf. FRAXINU > *freixo* 'ash-tree', DECIMA > *dízima* 'tithe', etc. In light of syncopes like AESTIMĀRE > *esmar* 'esteem' and *MEDIPSIMU > *mesmo* 'same', however, it is difficult to tell whether certain orginal sequences containing /s/ could syncopate before nasals.

The syncope of /ks/ also occurred before obstruents. Thus the syncope of *SEXIMA but not FRAXINU suggests that the deletion of /n/ bled syncope in the latter form.

(102) Interaction syncope (SYNC) and sonorant deletion (SD) in Portuguese

	*SEXIMA	FRAXINU
SD	N/A	*fréixio*
SYNC	*seisma*	N/A
	se(i)sma	*freixo*

In the case of *seisma*, note that /ʃ/ was depalatalized in syllable coda. Recall that palatals could not occur in codas in Portuguese, as the lack of apocope after /ʃ/ (e.g. *peixe, eixo*) seems to suggest. The case of /ks/ is, then, a very interesting one, which suggests that syncope in forms like *fisgar* 'harpoon' (< FIXICĀRE) and *seisma* occurred in spite of the constraint on palatal codas. Furthermore, the occurrrence of syncope between /st/ and a following nasal (e.g. AESTIMĀRE > *esmar* 'esteem') versus the nonoccurrence of apocope after word-final /st/ (e.g. ISTE > *este*, ***est* 'this') demonstrates that the forces of syncope gained enough strength to break the barriers of pre-exising phonotactics. The issue of constraints on syncope versus constraints on phonotactics is investigated in more depth in Chapter 6.

Before /r/, it appears that syncope did not occur after any /Cs/ sequence, cf. PASSERE > S *páxaro/*P *pássaro* 'bird' and A(N)SERE > S/P *ánsar* 'goose'. Recall that Latin did not possess the sequences /sl/ or /sr/. The occurrence of syncopes like GC *Cixila* > S *Cisla* (place name) and INSULA > S *i(n)sla/*P *ilha* 'island' leading to /sl/ demonstrates the apparently weaker constraint against /sl/ than /sr/.

5.3.6. **Syncope between two sonorants C_2(V)C_3**

In the same way that syncope could occur after a stop, syncope also could occur after a sonorant. Starting with cases in which C_2 is a nasal, /gn/ undergoes syncope before /r/, e.g. PIGNORA > S *pendra*/*prenda* 'article of clothing'. Recall, however, that the velar of this sequence vocalizes, i.e. [jn]. Before metathesis, this development to some extent parallels that of /nr/, particularly in verbs, e.g. *PŌNERÁT > OS *porná/pon(d)rá/porrá/*OP *ponrá/porrá* 'will put'. In Spanish, outputs with /nr/ normally syncopated and metathesized to /rn/, e.g. TENERU > *tierno,* 'tender'. Metathesis and epenthesis were two mutually exclusive repair strategies, i.e. TENERU > *[tjenro] > *[tjendro] > ***tierndro*. It was either or. The epenthesis seen in PIGNORA > S *pendra*/*prenda* 'article of clothing', then, apparently occurred instead of metathesis, which was blocked by the heavy initial syllable, whether [pegn.ra] or [pejn.ra].

5.3.7. **Syncope after a coronal geminate C_1C_2**

After the sonorant geminates /nn/, /ll/, and /rr/ syncope occurred in both languages, e.g. *CANNICA > P *canga* 'yoke', CABALLICĀRE > S *cabalgar/* P *cavalgar* 'ride', *IMBARRICĀRE > S/P *embargar* 'hinder'. Syncope here occurs before obstruents as well as sonorants, e.g. *FALLĪRA̲T > OS *faldrá* 'will lack', *BURRULA[160] > S/P *borla* '(wool) tassel'. The failure of *PINNULA[161] and *PILLULA to syncopate in Spanish (e.g. *peñola*/*péndola*/*abéñula* 'pen, eyebrow', *píldora* 'pill') is hard to interpret, cf. FLAMMULA > *Flambla*[162] (place name), MAMMULA > *mambla* 'rounded hillock'.

Excluding sequences which had already simplified or assimilated (e.g. /gn/, /lm/, /mn/), when a C_2 sonorant, preceded by a consonant, does not constitute a geminate, syncope appears to have been blocked. Unlike with C_2 stops, the nasal C_2 here apparently was not deletable, for which had syncope occurred it would have produced an illicit complex coda. [163]

This generalization, however, may be a byproduct of the constraints *NCN, *rCL, e.g. MARMORE > OS/OP *mármor,* P *mármore,* ***mar(m)bre* 'marble', TURTURE >

[160] Questionable etymology (see DCE).
[161] The form *abéñula* (15th century) from Mozarabic; péndola said to have dissimilated from péñola. Could the /d/ be from syncope followed by epenthesis (*penla* > *pendla* > *pendola*), or perhaps hypercorrection, cf. *cadnado, candado, cannado/cañado*.
[162] Castille, 915 (ORIG, 311).
[163]

OS *tórtora, **tortre* 'turtle-dove', etc. In order to explain this, it is necessary to point out that cases in which C_2 was a sonorant in Latin could only be preceded by another sonorant, e.g. /lm/, /rm/, /ln/, /rn/, etc[164]. Of such sequences, however, only /lm/ and /rm/ occur in our data set (e.g. CULMINE > *cumbre/cuime*, CARMINĀRE > OS *carmenar* 'comb'). In the first form, syncope occurred in Spanish, after /l/ was deleted, and it is not clear whether the absence of syncope in the second form is due to the labial or the two sonorants.

[164] This does not apply to the quite limited sequence /gn/.

5.4. **Syncope after a dorsal C_2**

This section investigates syncope after consonant + dorsal sequences. In the following forms, syncope occurred in both Spanish and Portuguese.

Table 106 **Syncope after Dorsal (Spanish and Portuguese)**

a. Pretonic syncope

skVl	LL MISCULĀRE	*mesclar/mezclar*	*mesclar*	'mix'
rkVl	EXTORCULĀRE	*estrujar*		'squeeze'

b. Posttonic syncope

skVp	EPISCOPU	*obispo*	*(o)bispo*	'bishop'
skVl	*FASCULA	*hacha*	*facha*	'torch'
	MASCULU[165]	*macho*	*macho*	'male'
	MŪSCULU[166]	*mus(c)lo*		'thigh'
nkVl	CONC(H)ULA[167]	*concha*	*concha*	'small shell'
ngVl	LL ANGULA[168]	*angra*	*angra*	'bay'
	SINGULU	*sendo/seño*	*selho/senho*	'each'
	UNGULA	*uña*	*unha*	'nail'
rkVl	CICERCULA[169]	*cicercha*		'garbanzo'

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[165] Attested as *masclus* in AP.
[166] The range of meanings for this word are S 'thigh', C 'shoulder' and 'muscle' for the rest, to which we can add S/P *músculo* and I *muscolo*. Clearly 'muscle' is learned. It seems unlikely that S *buche* P *bucho* 'stomach' stems from the same etymon (see DCE). REW cites an OP *musgoo*, which I have been unable to find.
[167] Lack of diphthongization in Spanaish (cf. AL *cuenya*) due to palatal (DCE).
[168] CL ANGULUS 'angle, corner, bay''. Spanish form from Portuguese (DCE), but perhaps both from Southern Italian *angra*.

	SARCULU	*sacho*	*sacho*	'hoe'
rgVt	(DE)EXPERGITU	*(d)espierto*	*(d)esperto*	'awake'

Table 12 presents forms which undergo syncope only in Spanish.

Table 107 **Syncope after Dorsal (Spanish)**

a. Pretonic syncope

skVm	GC *Crescemiri*		*Creixomil*	(place name)
nkVm	GC *Franchimiri*		*Francimil*	(place name)
ngVn	SANG(U)INĀRE	*sangrar*		'bleed'

b. Posttonic syncope

ngVn	ING(U)INE	*ingle*	*yngue*	'groin'
	SANG(U)INE	*sangne/sangre*	*sangue*	'blood'

In the following forms, syncope failed to occur in both Spanish and Portuguese.

Table 108 **No Syncope (Spanish and Portuguese)**

a. Pretonic non-syncope

rkVn	BARCINŌNE	*Barcelona*		(place name)
	CIRCINĀRE	*cercenar*	*cercear*	'cut'
rkVr	STERCORĀRE	*estercolar*		'fertilize'
rgVb	GC *Argibadi*		*Argivai*	(name)

[169] *Cizercha* in Nebrija. According to PENSADO-RUÍZ (1984), this is a Mozarabism, cf. CORTICE > *corcho* 'cork'.

b. Posttonic non-syncope

nkVb	LL CONCUBA	*cuéncoba*		'concubine'
nkVr	ANC(H)ORA[170]	*áncora/áncola*	*âncora/âncola*	'anchor'
lkVt	CULCITA	*có(l)cedra*		'cushion'
rkVn	CIRCINĒ	(*a*) *cercén*		'in circle'
	SARCINA	*sárcina/sárçana*		'impediment'
rkVr	CARCERE	*cárcel*	*cárcer(e)*	'prison'
	MERCURI(I) (DIES)	*miércoles*		'Wednesday'
	STERCORE	*estiércol*		'fertilize'
rgVn	BARGINA	*Bárcena*		(place name)
	MARGINE	*marcen/margen*	*margen*	'margin'
rgVl	PERGULA	*piérgula*	*pérgula*	'bower'

After a geminate, sycnope could occur in both Spanish and Portuguese.

Table 109 **Syncope after Geminate (Spanish and Portuguese)**

a. Pretonic syncope

kkVt	ACCE(P)TŌRE	*açtor*	*açor*	'hawk'

b. Posttonic syncope

kkVl	*CACCULU	*cacho*	G *cacho*	'piece'

There is only one case which failed to syncope in Portutguese (GC *reccemiri* > *reçomil*). The failure of syncope in /kkVm/ (particularly *[tsVm]) is parallel to that of /kVm/ (*[dzVm]), cf. DECIMA > *dízima*, ***dezma* 'tithe'.

[170] DCE attributes *ancla* for expected **ancra* to hypercorrection of Leonese/Portuguese *cr-* for *cl-,* i.e. *cravo*, etc.

5.4.1. **Syncope between a dorsal stop C_2 and obstruent C_3**

With only the development EPISCOPU > S/P *(o)bispo* 'bishop'[171], only two conclusions are possible: (1) /sk/ syncopated before a stop, either before or after obstruent voicing, depending on one's assumptions; (2) No conclusion, due to insufficient data. Conclusion (2) is not really a conclusion at all, but it is often necessary to reject the authenticity of a particular form, even if it cannot be shown that such a form was borrowed, when it can be demonstrated by some independent means that such as form does not fit the sound patterns of a given language.

In the case at hand, what makes the historian's job even more difficult is that, the farther one looks back in time, the more uncertain it is what the sound patterns of a particular language were. In this section, I will hopefully demonstrate that, in spite of the scarce data for syncope after a dorsal, there are definite patterns to be observed.

Given the single development LL CONCUBA > OS *cuéncoba* (Table 13), it appears that /nk/ did not syncopate before a stop. Furthermore, CULCITA[172] > OS *có(l)cedra* 'cushion' could be interpreted as a case of absence of syncope between /lk/ and a stop.

Sequences containing a coronal stop could syncopate before a stop, e.g. *ANTEPARĀRE > *amparar,* MASTICĀRE > *mascar*, while sequences containing a labial only could syncopate when preceded by a nasal, e.g. COMPUTĀRE > S/P *contar,* but CAESPITE > S/P *césped(e),* VESPERA > *viéspera/véspera.*

While /sp/ never syncopated, in light of the data in Table 13, it is fairly clear that /sk/ did, e.g. EPISCOPU > S/P *(o)bispo* 'bishop' , *FASCULA > *hacha/facha* 'torch'.

[171] In the case of *obispo*, the vocalism (i.e. ***obespo*) suggests that this word was probably learned. Nevertheless, it is clear that *obispo* undergoes syncope.
[172] S/P *colcha* from Old French *colche* 'bed' (< *colchier/coucher* < COLLOCARE 'place').

Syncope after /st/ and /sk/, but not /sp/ once again demonstrates the greater restriction placed on codas containing a labial in Hispano-Romance. What is not clear is why syncope came to occur after /mp/ (e.g. COMP(U)TARE, *COMP(E)RARE), but not /nk/ (e.g. *CONCUBA), especially if the labial is more marked.

In the case of the labial /p/, it is the postnasal context (i.e. /mp/) and not the postsibilant context (i.e. /sp/) which syncopated. In the case of the dorsal /k/, however, it is the converse, i.e. syncope for /sk/, but not /nk/. One hypothesis is that the scarcely attested form *cuéncoba,* which fell into disuse very early, is either a conservative spelling or a presyncope form, not unlike *cuémpetet* for *cuenta*. Had this form gone on to develop regularly, it would have most likely become ***cuenva/cuemba,* cf. /n(t)v/ (e.g. *ANTEVĪSU > *anviso/ambiso* 'wise'). With this assumption, then, of all of the stops, the labials are the most restricted place with respect to syncope.

Another hypothesis is that syncope did not occur in the context /nkVb/ because of the following voiced stop. Although syncopes like ANTEVĪSU > *anviso/ambiso* are found, this syncope did not involve two noncoronals like that of CONCUBA > **[kweŋkba].

What, then, happened in the case of *CULCITA? Pensado-Ruíz (1984: 314) points out that the form CULCITRA appears in Petronius, and later argues that syncope normally failed to occur between two consonant sequences. There are few forms presenting this CCVCC context, but cases like the following exist.

(103) Syncope between two CC sequences (i.e. CCVCC)

*PULLETRU	*potro*	*podro*	'colt'
*PALPETRA[173]	*párpado*		'eyelash'

[173] CL PALPEBRA.

The lack of syncope in *PALPETRA is very similar to that of *CULCITRA. In both forms, syncope did not occur after a non-geminate sequence followed by obstruent + liquid, in both cases /tr/. After the sonorant geminate /ll/, however, syncope apparently occurred (*PULLETRU).

There are also very few cases of /rk/ and /rg/. Like /nkVb/, /rgVb/ apparently resisted syncope in Portuguese (e.g. GC *Argibadi* > *Argivai*), but this is a Germanic borrowing. The only other cases occur in verb forms (e.g. (DE)EXPERGITU 'awake'), where analogy was rampant. Below, the Classical Latin present, perfect, and past passive participle stems of several stems ending in /rg/ are given the verb EXPERGERE[174] 'wake up', POR(RI)GERE 'get up, raise', and SUR(RI)GERE 'raise'.

(104) /-rg-/ stems

EXPERGŌ, EXPERGĪ, EXPERGITUS
POR(RI)GŌ, PORREXĪ, PORRECTUS
SUR(RI)GŌ, SURREXĪ, SURRECTUS

The variation seen in PORGŌ, SURGŌ ~ PORRIGŌ, SURRIGŌ is the result of syncope early on in Latin, followed by analogical restructuring on the base REGŌ, -RIGŌ 'put in line'. It appears that the paradigm of original /–rg-/ stems like EXPERGŌ was extended to verbs derived from –RIGŌ like PORGŌ. It, however, appears that other dorsal stems (i.e. stems ending in sonorant+/k/), also at some point influenced these /–rg-/ stems.

(105) Analogy in /-rg-/ Stems

CL	LL/PR
/-Rk-/ stems	

[174] Related to the deponent EXPERGISCOR, EXPERGISCĪ, EXPERRECTUS SUM 'awaken'.

SANCIŌ, SANXĪ, SANCTUS	>	SANCIŌ, SANSI, SANTU(S)
MULCEŌ, MULSĪ, MULTUS	>	MULCIO, MULSI, MULTU(S)
FARCIŌ, FARSĪ, FARTUS	>	FARCIO, FARSI, FARTU(S)

/-rg-/ stems

EXPERGO, EXPERGĪ, EXPERGITUS	>	EXPERGO, EXPERGI, EXPERGITU(S)
	⇨	*EXPERGO, EXPERSI, EXPERTU(S)
POR(RI)GO, PORREXĪ, PORRECTUS	⇨	*PORGO, PORGI, PORGITU(S)
	⇨	*PORGO, PORSI, PORTU(S)

Above, the symbol > is used to represent sound change, and the symbol ⇨ analogy. The verbs SANCERE 'sanctify', MULCERE 'milk', and FARCERE 'stuff' all had sigmatic (/-s-/, i.e. <s> or <x> after /k/) perfects and perfect passive participles in –TUS. These formants were spread to both original and analogical /-rg-/ stems, yielding new analogical perfects and perfect passive participles in –SI and –TU(S). In this manner, EXPERGITUS came to possess a participle EXPERTU, the source of *(d)esp(i)erto* 'awake'. Modern Italian continues the analogical paradigm of *PORGO, PORSI, PORTU(S), i.e. *porgo, porsi, porto* (*porgere*).

In § 5.2.1, it is claimed that the participle of /-lb-/ stems (e.g. VOLŪTUS >> *vuelto/volto* 'returned') was also analogical. The spread of the sigmatic perfect and the perfect participle –TU(S) reached not only /-rg-/ stems, but /-lb-/ stems also.

(106) Analogy in /-lb-/ Stems

VOLVŌ, VOLVĪ, VOLŪTUS	⇨	*VOLVO, *VOLVĪ, *VOLVITUS
	⇨	*VOLVO, *VOLSĪ, *VOLTUS

The strengthening (i.e. spirantization) of Latin [w] and weakening of postsonorant [b] would have led to a restructuring of the phonemic system of Late Latin. Verbs like those above originally containing [w] came to have either /b/ or /v/. This appears to have favored the spread of the above pattern to other stems ending in sonorant + voiced stop, such as /lb/.

This account resolves a longstanding debate in historical Romance phonology and morphology. Other accounts (e.g. Pensado-Ruiz 1984) either posit implasusible, early syncopes such as *SOLVITU > *suelto/solto* 'loose(ned)' *VOLVITU > *vuelto/volto* 'returnd', *EXPERGITU > *(d)esp(i)erto* 'awake' or reconstruct forms such as *SOLUTU or *SOLITU which have absolutely no antecedent in Latin CC stems. On my account, participially derived forms such as (*SOLTĀRE >) *soltar* 'loosen', (*VOLTĀRE) > *voltar* 'return', (*VOLTICĀRE >) *(re)volcar* 'turn over', and (*(DE)EXPERTU >) *(d)esp(i)erto* 'awake' are explained in a phonologically and morphologically natural manner.

5.4.2. Syncope between a dorsal stop C_2 and a sonorant C_3

Before a nasal, there are no examples of syncope after /sk/, /nk/ and /ng/, /rk/, and /rg/ seuences in Portuguese. There are no examples of /lkVm/, /lkVn/, /lgVm/, or /lgVn/. As discussed in 5.2.2, The same situation exists after a labial (i.e. *RCN). However, it was found in § 5.3.4 that /st/ and /nt/, /nd/ all came to syncopate before a nasal in Spanish. Furthermore, /ng/ came to syncopate before /n/, e.g. SANGUINE > *sangre* 'blood'

In Spanish, the only context with syncope for /ng/ is before /n/, e.g. ING(U)INE > *ingle* 'groin' SANG(U)INE > *sagne/angre* 'blood'). Although this was really /gw/, the glide deleted early on before front vowels, cf. GC *werra* > *guerra* /gera/ 'war'. The apparent acceptability of /ngn/ early on (e.g. *sangne*), as well as /ntn/ or /ndn/ at a deletion site (e.g. ANTENĀTU > *[antnado] > *annado/andado* 'step-son', LENDINE > *[ljendne] > *liendre* 'nit'), next to illformed /mpn/ (e.g. PAMPINU >*pámpano*, ***pam(p)no/pambro* 'grape leaf'), suggests that labial nasal sequences such as /pn/ or /bn/ were also more marked than dorsal nasal sequences such as /kn/ or /gn/ (cf. ARCHIDIACONU > *arci(di)a(g)no* 'archdiocese'). The later development of this /ngn/ follows the dissimilative development of all sequences containing two nasals (i.e. *NCN), cf. HOMINE > *omne* > *ombre* 'man'.

Since there are no cases of either /skVN/, /nkVN/, /lkVN/, or /lgVN/, it appears that syncope could have occurred in all of these environments as well. However, forms like *sárcina/sárçana* (< SARCINA 'impediment'), (*a*) *cercén* 'in circle' (< CIRCINĒ), and *Barcena* (< BARGINA) demonstrate that syncope failed to operate in the contexts /rkVn/ or /rgVn/. This suggests that between liquid and nasal syncope could not occur. Thus the constraint *RCN, valid for Portuguese[175], must be revised to something like *LCN for Spanish[176].

All postconsonantal dorsal sequences (e.g. /sk/, /nk/, /ng/, /rk/, and /rg/) undergo syncope before /l/. As discussed, this phenomenon did not just occur after dorsals, but after coronals (e.g. /st/, /nt/) as well, e.g. *FASCULA > *hacha/facha* 'torch'. As after the simplex stop, the resulting sequence palatalized in both Spanish and Portuguese, probably both starting as the palatal lateral /ʎ/ (identical to the result of the simplex stop), and later passing to affricate /tʃ/. After labials (e.g. /mp/, /bl/), there was often syncope (i.e. in Spanish) but no palatalization. Just as there are cases of sporadic syncope after simplex

[175] If *esmar* is native, then it appears that eventually /st/ came to syncopate before a nasal which had not deleted.
[176] Cases such as *pámpano* are not exceptions to this constraint because of the vowel change.

/p/ or /b/ in Portuguese (e.g. POPULU > *pobro* 'people', FABULĀRE > *falar* 'speak', STABULU > *estabro* 'stable'), there are also cases of syncope after consonant +labial, e.g. UMBILĪCU > *umbigo* 'belly button'.

It is interesting that there is a rough correspondence between where there was syncope with palatalization and the sequences most susceptible to syncope. øtherwise put, it has been noted that syncope occurred after /sk/ (e.g. *FASCULA > *hacha/facha* 'torch') and /st/ (e.g. ASTULA > OP *acha* 'splinter'), but not after /sp/ (e.g MESPILU > *n(i)éspera* 'medlar-tree').

Before a liquid, it is clear that syncope did not occur after any dorsal preceded by /r/ (e.g. CARCERE[177] 'prison', PERGULA 'bower'). However, cases like SARCULU (> *sacho*) demonstrate that early syncope and palaltalization occurred in the context /rkVl/. It is not clear whether PERGULA should have developed like UNGULA > *uña* 'nail' or SINGULU > *seño/sendo* 'both', i.e. PERGULA > ***piercha* or ***pieño/piendo* 'bower'. PERGULA may just be a late borrowing from Latin. Whenever its date of entrance, this form is like MERCORE > S *miércoles* instead of ***miercres* or ***miercles,* demonstrating that syncope never occurred in the environment /rCVl/.

In addition, note that later/learned forms like *mesclar/mezclar* (cf. *macho*) eventually syncopated in both Spanish and Portuguese. The occurrence of sequences like /skl/ and not /rkl/ at this stage in these languages demonstrates that CCL clusters such as these were wellformed as long as the first consonant was not /r/.

Since there were no dorsal fricatives or sonorants in Latin, the next section skips to syncope after geminates.

[177] It may be possible to have included /rts/ (< /rkj/) in this discussion of coronals.

5.4.3. **Syncope after a geminate C_1C_2**

Syncope occurred between the geminate /kk/ and a following obstruent in both Spanish and Portuguese, e.g. ACCE(P)TŌRE > *aç(t)or* 'hawk'. Note the early assimilation of original /pt/ to /(t)t/. Like the simplex dorsal, the geminate palatalized before a front vowel. The difference was that /kk/ developed to voiceless /ts/ in both Spanish and Portuguese, while /k/ developed to voiced /dz/.

The interaction of deletion and syncope again supports the already noted latenesss of syncope after a dorsal C_2, e.g. ACCE(P)TŌRE > *açtor/açor* 'hawk', in contrast to FLACCIDU > *(l)lacio, **laz(d)o* 'flacid'.

Just as /kVl/ syncopated, syncope after /kk/ also occured before /l/, e.g. CACCULU > S *cacho* 'piece'. The difference is that after the geminate the development was like other cases of /CkVl/, i.e. syncope followed by palatalization.

5.5. **Chapter conclusions**

Tables 110 and 111 illustrate the development of all attested original CCVC environments in Spanish and Portuguese. C_1C_2 appear on the vertical axis, and C_3 on the horizontal axis. The cells of unattested Latin sequences are blank. In some cases, the only representative(s) of a given sequence is/are likely to have undergone analogy, borrowing from another language, or learned entrance. Such cells have been specially marked, in order to emphasize the uncertainty of any generalizations based on these data.

Legend (Tables 110-111)

	Syncope
	Syncope, possible analogy or borrowing
	No syncope
	No syncope, possible analogy or borrowing
	No syncope, learned word
	No syncope due to VOD
	No candidates continued in Romance

Table 110 **Syncope CCVC (Spanish)**

	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
pp	ppp	ppb	ppt	ppd	ppk	ppg	ppf	pps	ppm	ppn	ppl	ppr
pt	ptp	ptb	ptt	ptd	ptk	ptg	ptf	pts	ptm	ptn	ptl	ptr
ps	psp	psb	pst	psd	psk	psg	psf	pss	psm	psn	psl	psr
tt	ttp	ttb	ttt	ttd	ttk	ttg	ttf	tts	ttm	ttn	ttl	ttr
kt	ktp	ktb	ktt	ktd	ktk	ktg	ktf	kts	ktm	ktn	ktl	ktr
kk	kkp	kkb	kkt	kkd	kkk	kkg	kkf	kks	kkm	kkm	kkl	kkr
ks	ksp	ksb	kst	ksd	ksk	ksg	ksf	kss	ksm	ksn	ksl	ksr
gm	gmp	gmb	gmt	gmd	gmk	gmg	gmf	gms	gmm	gmn	gml	gmr
gn	gnp	gnb	gnt	gnd	gnk	gng	gnf	gns	gnm	gpn	gnl	gnr
sp	spp	spb	spt	spd	spk	spg	spf	sps	spm	spn	spl	spr
st	stp	stb	stt	std	stk	stg	stf	sts	stm	stn	stl	str
sk	skp	skb	skt	skd	skk	skg	skf	sks	skm	skn	skl	skr
ff	ffp	ffb	fft	ffd	ffk	ffg	fff	ffs	ffm	ffn	ffl	ffr
sf	sfp	sfb	sft	sfd	sfk	sfg	sff	sfs	sfm	sfn	sfl	sfr
ss	ssp	ssb	sst	ssd	ssk	ssg	ssf	sss	ssm	ssn	ssl	ssr
mp	mpp	mpb	mpt	mpd	mpk	mpg	mpf	mps	mpm	mpn	mpl	mpr
mb	mbp	mbb	mbt	mbd	mbk	mbg	mbf	mbs	mbm	mbn	mbl	mbr
nt	ntp	ntb	ntt	ntd	ntk	ntg	ntf	nts	ntm	ntn	ntl	ntr
nd	ndp	ndb	ndt	ndd	ndk	ndg	ndf	nds	ndm	ndn	ndl	ndr
nk	nkp	nkb	nkt	nkd	nkk	nkg	nkf	nks	nkm	nkn	nkl	nkr
ng	ngp	ngb	ngt	ngd	ngk	ngg	ngf	ngs	ngm	ngn	ngl	ngr
nf	nfp	nfb	nft	nfd	nfk	nfg	nff	nfs	nfm	nfn	nfl	nfr
ns	nsp	nsb	nst	nsd	nsk	nsg	nsf	nss	nsm	nsn	nsl	nsr
mm	mmp	mmb	mnt	mmd	mmk	mmg	mmf	mms	mmm	mmn	mml	mmr

mn	mnp	mnb	mnt	mnd	mnk	mng	mnf	mns	mnm	mnn	mnl	mnr
nn	nnp	nnb	nnt	nnd	nnk	nng	nnf	nns	nnm	nnn	nnl	nnr
lp	lpp	rpb	lpt	lpd	rpk	lpg	lpf	lps	lpm	lpn	lpl	lpr
lb	lbp	rbb	lbt	lbd	lbk	lbg	lbf	lbs	lbm	lbn	lbn	lbr
lt	ltp	rtb	ltt	ltd	ltk	ltg	ltf	lts	ltm	ltn	ltl	ltr
ld	rdp	rdb	ldt	ldd	ldk	ldg	ldf	lds	ldm	ldn	ldl	ldr
lk	rkp	rkb	lkt	lkd	lkk	lkg	lkf	lks	lkm	lkn	lkl	lkr
lg	lgp	rgb	lgt	lgd	lgk	lgg	lgf	lgs	lgm	lgn	lgl	lgr
lf	lfp	lfb	lft	lfd	lfk	lfg	lff	lfs	lfm	lfn	lfl	lfr
ls	lsp	lsb	lst	lsd	lsk	lsg	lsf	lss	lsm	lsn	lsl	lsr
lm	lmp	lmb	lmt	lmd	lmk	lmg	lmf	lms	lmm	lmn	lml	lmr
ln	lnp	lnb	lnt	lnd	lnk	lng	lnf	lns	lnm	lnn	lnl	lnr
ll	llp	llb	llt	lld	llk	llg	llf	lls	llm	lln	lll	llr
rp	rpp	rpb	rpt	rpd	rpk	rpg	rpf	rps	rpm	rpn	rpl	rpr
rb	rbp	rbb	rbt	rbd	rbk	rbg	rbf	rbs	rbm	rbn	rbl	rbr
rt	rtp	rtb	rtt	rtd	rtk	rtg	rtf	rts	rtm	rtn	rtl	rtr
rd	rdp	rdb	rdt	rdd	rdk	rdg	rdf	rds	rdm	rdn	rdl	rdl
rk	rkp	rkb	rkt	rkd	rkk	rkg	rkf	rks	rkm	rkn	rkl	rkr
rg	rgp	rgb	rgt	rgd	rgk	rgg	rgf	rgs	rgm	rgn	rgl	rgr
rf	rfp	rfb	rft	rfd	rfk	rfg	rff	rfs	rfm	rfn	rfl	rfr
rs	rsp	rsb	rst	rsd	rsk	rsg	rsf	rss	rsm	rsn	rsl	rsr
rm	rmp	rmb	rmt	rmd	rmk	rmg	rmf	rms	rmm	rmn	rml	rmr
rn	rnp	rnb	rnt	rnd	rnk	rng	rnf	rns	rnm	rnn	rnl	rnr
rr	rrp	rrb	rrt	rrd	rrk	rrg	rrf	rrs	rrm	rrn	rrl	rrr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

Table 111 **Syncope CCVC (Portuguese)**

	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
pp	ppp	ppb	ppt	ppd	ppk	ppg	ppf	pps	ppm	ppn	ppl	ppr
pt	ptp	ptb	ptt	ptd	ptk	ptg	ptf	pts	ptm	ptn	ptl	ptr
ps	psp	psb	pst	psd	psk	psg	psf	pss	psm	psn	psl	psr
tt	ttp	ttb	ttt	ttd	ttk	ttg	ttf	tts	ttm	ttn	ttl	ttr
kt	ktp	ktb	ktt	ktd	ktk	ktg	ktf	kts	ktm	ktn	ktl	ktr
kk	kkp	kkb	kkt	kkd	kkk	kkg	kkf	kks	kkm	kkm	kkl	kkr
ks	ksp	ksb	kst	ksd	ksk	ksg	ksf	kss	ksm	ksn	ksl	ksr
gm	gmp	gmb	gmt	gmd	gmk	gmg	gmf	gms	gmm	gmn	gml	gmr
gn	gnp	gnb	gnt	gnd	gnk	gng	gnf	gns	gnm	gpn	gnl	gnr
sp	spp	spb	spt	spd	spk	spg	spf	sps	spm	spn	spl	spr
st	stp	stb	stt	std	stk	stg	stf	sts	stm	stn	stl	str
sk	skp	skb	skt	skd	skk	skg	skf	sks	skm	skn	skl	skr
ff	ffp	ffb	fft	ffd	ffk	ffg	fff	ffs	ffm	ffn	ffl	ffr
sf	sfp	sfb	sft	sfd	sfk	sfg	sff	sfs	sfm	sfn	sfl	sfr
ss	ssp	ssb	sst	ssd	ssk	ssg	ssf	sss	ssm	ssn	ssl	ssr
mp	mpp	mpb	mpt	mpd	mpk	mpg	mpf	mps	mpm	mpn	mpl	mpr
mb	mbp	mbb	mbt	mbd	mbk	mbg	mbf	mbs	mbm	mbn	mbl	mbr
nt	ntp	ntb	ntt	ntd	ntk	ntg	ntf	nts	ntm	ntn	ntl	ntr
nd	ndp	ndb	ndt	ndd	ndk	ndg	ndf	nds	ndm	ndn	ndl	ndr
nk	nkp	nkb	nkt	nkd	nkk	nkg	nkf	nks	nkm	nkn	nkl	nkr
ng	ngp	ngb	ngt	ngd	ngk	ngg	ngf	ngs	ngm	ngn	ngl	ngr
nf	nfp	nfb	nft	nfd	nfk	nfg	nff	nfs	nfm	nfn	nfl	nfr
ns	nsp	nsb	nst	nsd	nsk	nsg	nsf	nss	nsm	nsn	nsl	nsr
mm	mmp	mmb	mnt	mmd	mmk	mmg	mmf	mms	mmm	mmn	mml	mmr

mn	mnp	mnb	mnt	mnd	mnk	mng	mnf	mns	mnm	mnn	mnl	mnr
nn	nnp	nnb	nnt	nnd	nnk	nng	nnf	nns	nnm	nnn	nnl	nnr
lp	lpp	rpb	lpt	lpd	rpk	lpg	lpf	lps	lpm	lpn	lpl	lpr
lb	lbp	rbb	lbt	lbd	lbk	lbg	lbf	lbs	lbm	lbn	lbl	lbr
lt	ltp	rtb	ltt	ltd	ltk	ltg	ltf	lts	ltm	ltn	ltl	ltr
ld	rdp	rdb	ldt	ldd	ldk	ldg	ldf	lds	ldm	ldn	ldl	ldr
lk	rkp	rkb	lkt	lkd	lkk	lkg	lkf	lks	lkm	lkn	lkl	lkr
lg	lgp	rgb	lgt	lgd	lgk	lgg	lgf	lgs	lgm	lgn	lgl	lgr
lf	lfp	lfb	lft	lfd	lfk	lfg	lff	lfs	lfm	lfn	lfl	lfr
ls	lsp	lsb	lst	lsd	lsk	lsg	lsf	lss	lsm	lsn	lsl	lsr
lm	lmp	lmb	lmt	lmd	lmk	lmg	lmf	lms	lmm	lmn	lml	lmr
ln	lnp	lnb	lnt	lnd	lnk	lng	lnf	lns	lnm	lnn	lnl	lnr
ll	llp	llb	llt	lld	llk	llg	llf	lls	llm	lln	lll	llr
rp	rpp	rpb	rpt	rpd	rpk	rpg	rpf	rps	rpm	rpn	rpl	rpl
rb	rbp	rbb	rbt	rbd	rbk	rbg	rbf	rbs	rbm	rbn	rbl	rbr
rt	rtp	rtb	rtt	rtd	rtk	rtg	rtf	rts	rtm	rtn	rtl	rtr
rd	rdp	rdb	rdt	rdd	rdk	rdg	rdf	rds	rdm	rdn	rdl	rdr
rk	rkp	rkb	rkt	rkd	rkk	rkg	rkf	rks	rkm	rkn	rkl	rkr
rg	rgp	rgb	rgt	rgd	rgk	rgg	rgf	rgs	rgm	rgn	rgl	rgr
rf	rfp	rfb	rft	rfd	rfk	rfg	rff	rfs	rfm	rfn	rfl	rfr
rs	rsp	rsb	rst	rsd	rsk	rsg	rsf	rss	rsm	rsn	rsl	rsr
rm	rmp	rmb	rmt	rmd	rmk	rmg	rmf	rms	rmm	rmn	rml	rmr
rn	rnp	rnb	rnt	rnd	rnk	rng	rnf	rns	rnm	rnn	rnl	rnr
rr	rrp	rrb	rrt	rrd	rrk	rrg	rrf	rrs	rrm	rrn	rrl	rrr
	p	**b**	**t**	**d**	**k**	**g**	**f**	**s**	**m**	**n**	**l**	**r**

In Tables 112-113, the interaction of the deletion of intervocalic /d/, /g/ with syncope in the environment CCVC can be seen. Examples of this interaction are displayed in Table 17. As the data illustrate, voiced obstruent deletion always bled syncope after a CC sequence in both Spanish and Portuguese.

Table 112 **Deletion and Syncope**

spV(d)	EXPEDĪRE		*espir*	'dress'
mpV(d)	LIMPIDU	*limpio*	*limpo*	'clean'
stV(d)	MUSTIDU[178]	*mustio*	*murcho*/G *mucho*	'moist'
skV(d)	*ROSCIDĀRE	*rociar*	*rociar*	'dampen with dew'
nkV(d)	RANCIDU	*rancio*	*rանço*	'rancid'

Furthermore, some interesting generalizations emerge when syncope after a singleton is compared to syncope after the corresponding geminate. In Table 113, compare the development of the member of each pair.

Table 113 **Singleton versus Geminate at Deletion Site**

sVk	RASICĀRE	*rascar*	*rascar*	'scratch'
	RESECĀRE	*rasgar*	*rasgar*	'rip'
ssVk	APPRESSICĀRE		*apriscar*	'shelter cattle'
	*REMUSSICĀRE		*amusgar*	'lay back ears'

[178] MUSTU > S *mosto*, OF *most* (*moût*)

	*QUASSICĀRE	*cascar*	*cascar*	'deshell'
mVl	TREMULĀRE	*tiemblar*		'tremble'
	CUMULU	*colmo*	*combro*	'peak'
mmVl	MAMMULA	*mambla*	*mâmoa*	'hillock'
nVk	(DIE) DOMINICU	*domingo*	*domingo*	'Sunday'
	MANICA	*manga*	*manga*	'sleeve'
nnVk	*DOM(I)NICĀLE	*doñegal*		'Sunday'
	*DOM(I)NICA	*dóñiga/donga/duenga*[179]		'lordly'
nVl	?			
nnVl	*PINNULA	*peñola/péndola*		'pen, eyebrow'
lVk	DELICĀTU	*delgado*	*delgado*	'fine, thin'
llVk	CABALLICĀRE	*delgado*	*cavalgar*	'mount'
lVl	*ŪLULĀRE	*aullar*	*uivar*	'howl'
	PILULA	*pella*	*pela*	'ball'
llVl	*PILLULA	*píldora*	*pilula*	'pill'
lVr	VALĒRÁT	*val(d)rá*	*valrá*	'will be worth'
llVr	*FALLĪRA̲T	*faldrá*		'will lack'
	*TOLLERA̲T	*toldrá*		'will take'
rV(d)	VIRIDE	*verde*	*verde*	'green'
rrV(d)	*ARREDĀRE	*arrear*		'impel, furnish'
rVk	VERĒCUNDIA	*verguença*	*vergonça*	'shame'
	ASTURICA	*Astorga*		(place name)
rrVk	IMBARRICĀRE	*embargar*	*embargar*	'hinder'
rV(g)	ĒRIGERE	*erguir*	*erguer*	'erect'
rrV(g)	CORRIGERE	*corre(g)er*?[180]		'govern'

[179] Cf. the place names *la Cueva donga/Covadonga* (< *cova dom(i)nica*), *Araduenga* (Castille), *Viladóniga* (Galicia), ORIG (162-3).
[180] REW aduces an OS *correr* from this root.

	PORRIGERE	*purrir*		'reach out'
rVl	MERULU	*mierlo*	*merlo*	'blackbird'
rrVl	*BURRULA	*borla*	*borla*	'(wool) tassel'
rVr	*FERĪRÁT	*ferrá*	*ferrá*	'will wound'
rrVr	*CURRERA̲T	*correrá*	*correrá*	'will run'

From the table above, it is not entirely evident that singletons behave differently from geminates with regard to syncope. In Portuguese, the syncope of CUMULU > *combro* 'peak' (> *comoro*, by hypercorrection?) but lack thereof in MAMMULA > *mâmoa* 'hillock' may suggest a greater resistance of the geminate to syncope. In Spanish, *ARREDĀRE > *arrear* 'impel, furnish'and PORRIGERE > *purrir* 'reach out' (no syncope), next to VIRIDE > *verde* 'green' and ĒRIGERE > *erguer* 'erect' (syncope) could also be the product of the singletons' greater predisposition to syncope

Upon examining cases of syncope before voiceless stops, which were not subject to deletion, it is evident that both singletons and geminates eventually undergo syncope, e.g. DELICĀTU > *delgado* 'thin', DELICĀTU > *cabalgar* 'ride'. It is not clear that evidence from the presence or absence of voicing of the following obstruent reveals any chronological differences in the syncope of singleton versus geminate. For the singleton /s/, the following stop is voiced in *rasgar* 'rip' (< RESECĀRE), yet voiceless in *rascar* 'scratch' (< RESECĀRE). Nunes (1945) and others such as Harris (1990) interpret this as earlier syncope in the case of *rascar*, which leads to the conclusion that syncope after /sk/ was later than after /st/, e.g. *costum(n)e, puesto/posto*. The reasons for this, however, are not clear. It is known that POSTU alternated with POSITU already in Classical Latin.

In regard to the geminate /ss/ and the sequences /ns/ and /rs/, some additional information on the normal development of these sequences is in order. Whereas /ns/ simplifies to /s/ (HR /z/) very early on in Western Romance (cf. MENSA > S/P *mesa* 'table') /rs/ yields both /ss/ (HR /s/) and /s/, cf. URSU > OS/OP *osso* (P *urso* learned), DEORSU > S *yuso*, P *juso* 'below'. Compare the results of both of these sequences.

(107) Other Sources of Spanish and Portuguese /s/ and /z/

ssVk	*APPRESSICĀRE		*apriscar*	'shelter cattle'
	*REMUSSICĀRE		*amusgar*	'lay back ears'
	*QUASSICĀRE	*cascar*	*cascar*	'deshell'
nsVt	*CONSŪETŪMINE	*costumne*	*costume*	'custom'
	CONSŪTŪRA	*costura*	*costura*	'sewing'
rsVk	PERSICU	*prisco*	*pêssego*	'peach'
	*VERSICU	*bizco*	*vesgo*	'cross-eyed'

Although some scholars like Malkiel (1949) may question the native origin of *cascar* and *rascar*, claiming that both forms entered from the East (cf. C *cascar*), it is known that all of the above-cited forms are present in both Spanish and Portuguese early on.

The data in (107) demonstratres that pretonic and posttonic /(n)sVt/ contexts behave the same, both yielding /st/. In the case of /rs/, there are no environments with following /t/, but /rsVk/ yields /sk/ in Spanish. The fact that both singleton /s/ (< /s/ and /ns/) and geminate /ss/ (< /ss/ and /rs/) all have outcomes with a voiceless obstruent makes it unlikely that consonant length played a role in syncope after a sibilant.

There are many CCC gaps in Tables 110 and 111. From the examination of syncope in this chapter, it is apparent that syncope was particularly favored after a sonorant or /s/ followed by a stop, e.g. EPISCOPU > *(o)bispo*, MASTICĀRE > *mascar* ‘chew’, etc. The following table summarizes the constraints on syncope after a sonorant or /s/ + obstruent. Parentheses indicate obstruent deletion (i.e. VOD), and asterisks indicate unattested sequences. Bold C_2 segments are those after which syncope actually occurred. Furthermore, unless otherwise noted, these generalizations obtain in both Old Spanish and Old Portuguese.

Table 114 **Environments for CC(V)C syncope**

s	p b f t d s **k** g	p, b, f	skp
s	p b f t d s k g	t, d, s	*spt, *sp(d) *st(d) *sk(d)/sts(d)
s	p b f **t** d s k g	k, g	stk
s	p b f **t** d s k g	m, n	stm, stn, *skm (OP)
s	p b f **t** d s **k** g	l, r	*spl, *spr, stl, str, skl

m, n	$\left\{\begin{matrix} p & b & f \\ \mathbf{t} & d & s \\ \mathbf{k} & g & \end{matrix}\right\}$	p, b, f	ntp, ntb *nkb?
m, n	$\left\{\begin{matrix} \mathbf{p} & \mathbf{b} & f \\ t & \mathbf{d} & \mathbf{s} \\ k & g & \end{matrix}\right\}$	t, d, s	mpt, mbt?, *mp(d), mps nds, nst, *ns(d) *nk(d)
m, n	$\left\{\begin{matrix} p & b & f \\ \mathbf{t} & \mathbf{d} & \mathbf{s} \\ k & g & \end{matrix}\right\}$	k, g	*mpk? ntk, *nt(g), ndk, *nd(g), nsk
m, n	$\left\{\begin{matrix} p & b & f \\ t & d & s \\ k & g & \end{matrix}\right\}$	m	*ntm, ndm (OP) *nkm
m, n	$\left\{\begin{matrix} p & b & f \\ \mathbf{t} & \mathbf{d} & s \\ k & \mathbf{g} & \end{matrix}\right\}$	n	*mpn, *mbn (OP), *mbl (OP?) ntn/ndn (*OP) ngn (*OP)
m, n	$\left\{\begin{matrix} \mathbf{p} & \mathbf{b} & f \\ \mathbf{t} & \mathbf{d} & \mathbf{s} \\ \mathbf{k} & \mathbf{g} & \end{matrix}\right\}$	l, r	mpl (OS), mpr, mbl?, ntl (OS), ntr, nsl, *nsr nkl, *nkr, ngl
l	$\left\{\begin{matrix} p & b & f \\ t & \mathbf{d} & s \\ k & g & \end{matrix}\right\}$	p, b, f	ldf

l	$\left\{\begin{array}{ccc} p & b & f \\ t & d & s \\ k & g & \end{array}\right\}$	t, d, s	*lkt
l	$\left\{\begin{array}{ccc} p & b & f \\ t & d & s \\ k & g & \end{array}\right\}$	k, g	*ld(g)?
l	$\left\{\begin{array}{ccc} p & b & f \\ t & d & s \\ k & g & \end{array}\right\}$	m, n	*ldm , *lf(n) (OP)
l	$\left\{\begin{array}{ccc} p & b & \mathbf{f} \\ \mathbf{t} & \mathbf{d} & s \\ k & g & \end{array}\right\}$	l, r	lfr ltr, ldr (OS)
r	$\left\{\begin{array}{ccc} p & b & f \\ t & d & s \\ k & g & \end{array}\right\}$	p, b, f	*rdb, *rgb (OP)
r	$\left\{\begin{array}{ccc} p & b & f \\ \mathbf{t} & \mathbf{d} & s \\ k & g & \end{array}\right\}$	t, d, s	*rbt *rtt?, rdt, rts (rgt?)

r	p b **f** t **d** **s** k g	k, g	rfk/rsk (OS) rdk (rddz), *rdk (OP)
r	p b f t d s k g	m, n	*rtn, *rdn *rkn
r	p b f t d s **k** g	l	rkl, *rgl
r	p b f t d s k g	r	*rtr, *rbr, *rfr *rkr

From these data, the following phonotactic generalizations emerge.

(108) Phonotactic generalizations (syncope)

- Syncope before a nasal is in general disfavored.
- Syncope between nasal + stop and liquid is favored.
- Syncope after /st/ and /sk/ occurs before stops, nasals, and liquids in both languages.

- Syncope after /mp/, /nt/ and perhaps /nk/ occurs before stops in both languages.
- Syncope when both C_1 and C_3 are nasals occurs only in Spanish (/nt/, /nd/).
- Syncope after /mp/ and perhaps /mb/ occurs before stops and liquids, but not before nasals.
- Syncope are nasals only occurs with /nt/ and /nd/ in Spanish.
- Syncope when both C_1 and C_3 are /r/ never occurs.
- Syncope never occurs after /sp/.

Syncope of a given sequence before a liquid always implies syncope of that sequence before a stop, but the converse is not true. Furthermore, /st/ is the most favored syncope overall, occurring before stops, nasals, and liquids. Moreover, when syncope occurs before a nasal, it occurs in the other contexts as well. These restrictions seem to gibe well with the chronology of syncope in Spanish, where syncope after /nt/ and /nd/ was one of the latest syncopes. These generalizations are schematized in the table below. The following abbreviations are used: stop (T), nasal N nasal, liquid (L).

Table 115 **The effect of C_3 on syncope of a CC(V)C sequence**

Labial C_2	Coronal C_2	Dorsal C_2
*spT	stT	skT
(spN)	stN	(skN)
*spL	stL	skL
mpT	(ntT)	(nkT)
*mpN	(*)ntN	(nkN)
mpL	(*)ntL	(*)nkL
*lpT	(ltT)	(lkT)

*lpN	(ltN)	(lkN)
(lpL)	ltL	(lkL)
(rpT)	(rtT)	(rkT)
(rpN)	(rtN)	(rkN)
(*)rpL	(*)rtL	(*)rkL

Table 115 illustrates the greater predisposition of a coronal C_2 than a labial C_2 or a dorsal C_2 to syncope. Otherwise stated, if syncope occurs in a particular context after /mp/ or /nk/, syncope will also be expected if attestion permits after /nt/ in a similar context. For example, the syncope between /mp/ and a stop in COMPUTĀRE > *contar* 'count, tell' implies syncope between /nt/ and a stop, e.g. *ANTEPARĀRE > *amparar* 'protect'. Likewise, the syncope between /sk/ and a stop in EPISCOPU > *(o)bispo* 'bishop' implies syncope between /st/ and a stop (e.g. MASTICĀRE > *mascar* 'chew'). The converse is not true, however. The syncope between /nt/ and a nasal of ANTENĀTU > OS *annado/andado* 'step-son' does not imply syncope between /mp/ and a nasal, e.g. PAMPINU > *pámpano*, ***pampno* 'grape leaf'. These C_2 place implications are summarized below (>> denotes an implication).

(109) C_2 place implications in the syncope of CC(V)C sequences

Coronal	>>	Dorsal	>>	Labial
st		sk		*sp
nt/nd		nk/ng		mp/mb
lt/ld		lk/lg		lp/lb
rt/rd		rk/rg		rp/rb

CHAPTER 6

THE FORMAL INGREDIENTS OF SYNCOPE: PHONOTACTIC CHANGE AND OPTIMALITY THEORY

6.1. Introduction

This chapter recapitulates and evaluates the phonological and phonotactic effects which were and were not found to be significant in syncope. These effects are classified as either segmental, syllabic, or phonotactic (attestation). After discussion of these effects, the theoretical implications of this dissertation are examined. In light of the recent interest in Romance syncope within the framework of Optimality Theory (e.g. Hartkemeyer 2000), an OT formulation of some of the constraints found to be significant in Hispano-Romance is given, and two views of phonotactic change (the simultaneous versus stepwise accounts) are evaluated.

6.2. Segmental effects

These effects refer to the features of a consonant in the original C_1VC_2 or C_1C_2 VC_3, string, whether C_1, C_2 or C_3. In order to facilitate the comparison of original CVC and CCVC contexts, this section uses the terms prevocalic ($\underline{C}$V or C$\underline{C}$V) and postvocalic (CV$\underline{C}$, CCV$\underline{C}$) consonants. In addition, statements referring to both segments (particularly homorganicity) are discussed below.

6.2.1. **Prevocalic consonant effects**

There is considerable evidence that the nature of the prevocalic consonant played an important role in syncope in Spanish and Portuguese. Chapter 4 (§ 4.8) identified a hierarchy of place features on C_1 according to how much they favor syncope in C_1VC_2 strings. The basic division among prevocalic consonants is sonorant versus obstruent. Consonant place (i.e. coronal versus noncoronal) is another variable. Below, prevocalic sonorants/sibilants are examined.

6.2.1.1. **Prevocalic sonorant or sibilant (RVC or CRVC)**

Syncope was most favored when C_1 was a sonorant or sibilant. Because all sonorants except /m/ were coronal, a metaeffect is that syncope occurred with greater frequency after coronals than after noncoronals.

In the table below, reconstructions and examples of all attested C_1VC_2 strings containing a sonorant or sibilant C_1 are given. Examples showing only one form, if not specially indicated, occur in both Spanish and Portuguese. Otherwise, the normal convention of separating Old Spanish and Old Portuguese with a slash is used.

Table 116 **Hispano-Romance Syncope after sonorant/sibilant**

CL	PHR	OS	OP	Examples
sVp				
sVt	*st	st	st	*puesto/posto*
sVk	*sk/sg	sk/sg	sk/sg	*rascar/rasgar*
sVb				

sVd				
sVg	*sg	sg		S *Sesgudo*
sVf				
sVs				
sVm	*sm	sm		S *prosmano*
sVn	*sn	sn	sn	*asno*
sVl	*(n)sl	sl	□	*isla/ilha*
sVr	*(n)sVr	(n)sVr	(n)sVr	*ánsar*
mVp				
mVt	*nd	nd	nd	*conde*
mVk	*mdz/dzm(>sm)	ndz/sm	ndz/ns/sm	*anzuelo/anzolo/cisme/chisme*
mVb				
mVd	*mV(d)	mV	mV	*hámago/ámego*
mVg	*mV(g)	mV	mV	*humear/fumear*
mVf				
mVs				
mVm				
mVn	*mVn	mn/mbr	mV(n)	*omne/omen*
mVl	*m(b)l	mbl	mbr	*semblar/sembrar*
mVr	*m(b)r	mbr	mbr	*(h)ombro*
nVp	*mp?	mp	mp	*mamparar*
nVt	*nd	nd	nd	*atuendo/atondo*
nVk	*ng	ng	ng	*manga*
nVb				
nVd	*nV(d)	nV/nd	nV/nd	*bendezir/bendizer*
nVg				
nVf	*nf	nf	nf	*benfetría/bemfeitoria*
nVs				
nVm	*nm/lm/rm	lm/rm	lm	*alma/mermar*
nVn				
nVl				

nVr	*nr/rr	rn/rr/ndr	nr/rr	*porná/pon(d)rá/porrá*
lVp	*lp/lb	lp	lp/lb	*colpe/golpe/colbe*
lVt	*ld	ld	ld	*-ldad(e)*
lVk	*lg/ldz	lg/ldz	lg/ldz	*delgado/salze/Salzeda*
lVb	*l(V)b		lv	*ol(i)veira*
lVd	*ld	ld	ld	*caldo*
lVg				
lVf	*lf	lv		*malvazo*
lVs	*ls/sl	ls/sl		*Elsonza/Eslonza*
lVm	*lm	lm	*lm (> rm)	*el(i)mosna/esmol(n)a*
lVn	*ln	ln	l	*mulnera/moleiro*
lVl	*ll	ll/□	l	*pella/pela*
lVr	*lr	l(d)r	lr	*val(d)ra*
rVp				
rVt	*rd	rd	rd	*verdad(e)*
rVk	*rg/rdz	rg/rdz	rg/rdz	*amargar/morziello/murzelo*
rVb	*rv	rv	rv	*cerveza/cerveja*
rVd	*rd	rd	rd	*verde*
rVg	*rg/rdZ	rg/rdz	rg/rdz	*erguir/erguer*
rVf	*rv	rb	rv	*escarbar/escarvar*
rVs	*ls/sl	ls/sl		
rVm	*rm	rm	rm	*yermo/ermo*
rVn	*rn		rn	*arnado*
rVl	*rl	rl	rl	*mierlo/merlo*
rVr	*rr	rr	rr	*ferrá*

There may be universal as well as language-specific reasons for the preference of syncope leading to sonorant or sibilant codas. The sonorants and the sibilant /s/ are known to have more acoustic energy. It is wellknown that fricative noise and formant structure aids in the perception of segments especially in less prominent syllable margins. Thus, syncope of the middle vowel in a VC_1VC_2V string would lead to VC_1C_2V, in which originally prevocalic C_1 ends up in a postvocalic context. Phonetic cues are known to be weaker in postvocalic contexts than in prevocalic contexts. While stops depend on a neighboring vowel for perception (external cues), sonorants and /s/ also have internal cues which aid in their perception. Therefore, syncope of a sonorant or /s/ would not run as much risk of misperception as syncope of a stop.

6.2.1.2. **Prevocalic stop (TVC or CTVC)**

Despite the lower perceptibility of postvocalic stops, there are still cases of early syncope involving originally prevocalic stops. The earliest syncopes seem to have occurred to a greater extent when C_1 was a stop followed by a liquid, e.g. OCULU > *ojo/olho* 'eye', LEPORE > *liebre/lebre* 'hare', in contrast to late/non-syncope after between two stops, e.g. NATICA > *nadga*/*nádega* 'buttocks' or a stop and a nasal, e.g. RETINA > *rienda*/*rêdea* 'rein' (§ 4.8). In light of the syllabification of the stop + liquid as a complex onset rather than a coda, it is clear that the Coda Condition was active at this stage.

In addition, data from early Hispano-Romance (particularly Spanish) suggest that syncope as well as apocope was more favored after a prevocalic coronal or dorsal stop than after a labial stop. Syncope occurred everywhere but between a labial and nasal, JUVENE > *joven/jovem* 'young', PAMPINU > *pámpano*, ***pampno* 'grape leaf', suggesting that syncope between a labial C_1 and a nasal was the least favored environment for syncope during the formative stages of Spanish. Compare the occurrence versus nonoccurrence of syncope before stop (T), nasal (N), and liquid (L) below.

(110) C_1 place implications in the syncope of C(V)C sequences (Spanish)

Coronal,	Palatal/Dorsal	>>	Labial
tVT	kVT [dzVd]		pVT
tVN	kVN		*pVN
tVL	kVL		pVL

In Portuguese, the absence of syncope except after the coronal affricate /dz/ when a stop followed (e.g. PLACITU > *[pradzedu] > *prazo* 'term') and coronal or dorsal stop + liquid sequences suggests that plosives (i.e. stops and affricates) of all places were not wellformed in prenasal contexts.

(111) C_1 place implications in the syncope of C(V)C sequences (Portuguese)

Coronal,	Palatal/Dorsal	>>	Labial
*tVT	kVT [dzVd]		(*)pVT
*tVN	*kVN		*pVN
tVL	kVL		(*)pVL

Although Spanish extends syncope to many more environments than Portuguese, it is not true that all sequences are wellformed, as the table below illustrates.

Table 117 **Syncope after a Non-Sibilant Obstruent**

CL	PHR	OS	OP	Examples

pVt	*(p)t, *bd, *bVd	t, bd	t, d, vVd	*grieta/greta, a(b)dega, cabdal/cabedal*
pVn	*bVn	mn	bV(n)	*Ramnate/Revinhade*
tVt	*tt	t	t, v	*matino*
tVn	*dVn	nd	dV(n)	*riendas/rédeas*
kVt	*dz(V)d	dzd	dz	*plazdo/prazo*
kVn	*gVn	(g)n	gV(n)	*arci(di)a(g)no/arcidiag(o)o*
bVt	*bVd	bd	vVd	*cobdo/côvedo*
bVn	*vVn	vVn	vV(n)	*joven/jóvem*
dVt	*dVd	dd > d?	(d)Vd	*pedo/peido*
dVn	*dVn	dn	V(n)	*Fre(d)nando/Friande*
gVt	*(g)Vd	Vd	Vd	*dedo*
gVn	*(g)Vn	Vn	V(n)	*herrén/ferrã(e)*

Chapter 5 revealed a greater predisposition to syncope after a coronal C_2 than after a labial C_2 in a $C_1C_2C_3$ string. That is, when syncope occurred in a particular context after /mp/ or /nk/, syncope occurred after /nt/ in a similar context, if such a context existed. For example, the syncope between /mp/ and a stop in COMPUTĀRE > *contar* 'count, tell' implies syncope between /nt/ and a stop, e.g. *ANTEPARĀRE > *amparar* 'protect'. The converse was not true, however. The syncope between /nt/ and a nasal in ANTENĀTU > OS *annado/andado* 'step-son' does not imply syncope between /mp/ and a nasal, e.g. PAMPINU > *pámpano*, ***pampno* 'grape leaf'. These C_2 place implications are summarized below (>> denotes an implication).

(112) C_2 place implications in the syncope of CC(V)C sequences (§ 5.5)

Coronal, Dorsal >> Labial

st	sk	*sp
nt/nd	nk/ng	mp/mb
lt/ld	lk/lg	lp/lb
rt/rd	rk/rg	rp/rb

These facts for CCVC contexts gibe with the rankings found for CVC contexts above, namely Coronal, Dorsal >> Labial.

6.2.2. **Postvocalic consonant effects**

Both Chapters 4 and 5 revealed differences in the syncope after a particular prevocalic CV when different C contexts followed. The basic divisions among postvocalic consonants are liquid, nasal, and obstruent. Place (i.e. coronal versus noncoronal) is another variable for stops.

6.2.2.1. **Postvocalic liquid**

Syncope occurred in $CVC_1(V)C_2V$ and $CVC_1C_2(V)C_3V$ strings, when the originally prevocalic obstruent could syllabify with the following consonant, forming a complex onset (i.e. $[CV.C_1C_2V]$ or $[CVC_1.C_2C_3V]$), e.g. APERĪRE > *abrir* 'open', VETERE > *v(i)edro* 'old (Chapter 4), *COMPERĀRE > *comprar* 'buy', INTERANEA > *entraña/entranha* 'innards' (Chapter 5). Syncope occurred to a greater extent when the following sonorant was /r/. When /l/ followed, syncope occurred regularly in Spanish, e.g. POPULU > *pueblo* 'people', FABULĀRE > *hablar* 'speak', AMYNDULA > *almendra/amêndoa* 'almond', etc. Although analysis of Portuguese is problematic, there are cases of syncope in Portuguese before /l/, e.g. FABULĀRE > *[fablar] > *falar* 'speak', JACERÁT > *[dʒadzrá] > *jará* 'will lay'. Thus, in spite of the eventual alteration of such sequences in Portuguese, it is clear that syncope was, at least in part, extended to these contexts.

6.2.2.2. **Postvocalic nasal**

Chapters 4 and 5 found that syncope before nasals was disfavored, i.e. *C_n(V)N, e,g, JUVENE > *joven/jovem* 'young', PAMPINU > *pámpano*, ***pampno* 'grape leaf'. In Spanish but not Portuguese, a stop followed by a nasal, however, could undergo syncope. Syncope occurred after a coronal or dorsal obstruent.

(113) Syncope between coronal + nasal

		Old Spanish	Old Portuguese	
dVn	*RETINAS	*riendas*	*rédeas*	'regns'
dzVn	ROTICINU	*rodezno*	*rodízio*	'wheel'
ndVn	LENDINE	*liendre*	*lêndea*	'nit'

(114) Syncope between dorsal + nasal

gVn	ARCHIDIACONU	*arci(di)a(g)no*	*arcidiag(o)o*	'archdiocese'
ngVn	SANGUINE	*sangre*	*sangue*	'blood'

The coronal is preserved via metathesis (RETINA > *[rjedna] > *rienda* 'rein', § 4.3.2.2), and postnasal coronal and nasal *[ndn], *[ngn] are resyllabified via dissimilation.

A postvocalic dorsal stop deleted before a nasal, e.g. */Vgn/ > /Vn/[181]. These developments seem to have been motivated by syllable contact and sonortity (see Vennemann 1988).

In the case of labial obstruent + nasal, neither syncope nor metathesis occurred (§ 4.2.2.2).

(115) Non-syncope between labial + nasal (Spanish and Portuguese)

		Old Spanish	Old Portuguese	
vVn	JUVENE	*joven*	*jovem*	'young'
	COPHINU	*cúevano*		'basket'
mpVn	PAMPINU	*pámpano*		'grape-leaf'

As discussed in § 6.2.1.2, labial stops are the only segments which never emerge from syncope before nasals, suggesting that labial is the most marked of places in Spanish. In fact, when the results of *apocope extrema* (Chapter 3) are taken into account, it is also clear that labials were not permitted in word-final position in early Old Spanish. Thus /bn/, /vn/ were apparently not acceptable syncope outputs (e.g. *cuévano*) due to markedness and syllable contact constraints.

6.2.2.3. **Postvocalic obstruent**

Whether a postvocalic obstruent was coronal or noncoronal was found to have a significant effect on syncope. Although labial stop codas arise in Spanish and Portuguese from syncope before coronals, only Spanish undergoes syncope before noncoronals.

[181] The case of ANTENĀTU (> OS *annado/andado*, OP *anteado/enteado* 'step-son') is problematic in light of the Spanish doublets. It is probable that the morphological/word boundary of this word (ANTE+NĀTU) favored the retention and eventual dissimilation of both /n/, i.e. ANTE+NĀTU > *[ante+nado] > *[an(t)+nado] > *annado/andado*, instead of development to /ntr/, i.e. ***antrado*.

(116) Wellformedness of CC sequences containing a labial C_1

a. Labial + coronal (Spanish and Portuguese)

pt	APOT(H)ĒCA	*abdega*	*adega*	‘cellar’
	*RECAPITĀRE	*recabdar*	*(arre)cadar*	‘get (done)’
bt	*AVE-TARDA	*abtarda*		(bird)
	CĪVITĀTE	*cibdat*	*cidade*	‘city’

b. Labial + noncoronal (Spanish only)

*bk	*FRABICA	*fragua*	*frávega*	‘forging’
*fk	SANCTIFICĀRE	*santiguar*	*santivigar*	‘sanctify’

Labials coming in contact with a noncoronal from syncope undergo metathesis in Spanish (b), e.g. *FRABICA > *[fravega] > *[fravga] > [fraɣwa]. Although the resulting segment is a labiovelar /gw/, this implies that dorsal + labial is the preferred order of these two places. The emergence of noncoronal + noncoronal demonstrates that the Latin Cluster Condition (Chapter 1) failed to block syncope in Spanish, On the basis of all of the above facts, it is possible to establish a hierarchy of features on a postvocalic C which license syncope. The easiest syncopes of a given postvocalic C involve a following coronal obstruent (e.g. *plazdo, cobdo, orebze*), while the most difficult syncopes involve a noncoronal C_2 (*santiguar*) and/or a nasal (e.g. *riedna, joven*).

(117) Syncope hierarchy

	C_2	
[+coronal]	[-coronal]	[+nasal]
→	→	→
plazdo *cobdo* *orebze*	**santivgar > santiguar*	*riedna, joven*

6.2.3. **Homorganicity effect**

When both prevocalic and postvocalic consonants were homorganic, syncope was especially favored. In the most easily explained cases, C_1 and C_2 were of the same place of articulation at the time syncope occurred. For instance, the apparently very early syncope in *FĪGICĀRE (S/P *ficar* 'remain') involves two dorsals, and the somewhat later syncope in PLACITU (OS *plazdo*, P *prazo* 'term') occurred when both obstruents were anterior coronals (Harris, 1991).

As we have seen, syncope could produce coda /ts/ or /dz/ in word-medial contexts, e.g. PLACITU > * [pladzidu] > *[pladzdu] > OS *plaz(d)o*, P *prazo* 'term'[182]. Both Spanish and Portuguese allow syncope here, yet recall that, when a nasal follows, syncope only occurs in Spanish (e.g. S *diezmo*, *rodezno* versus P *dízima*, *rodízio*)[183].

This divergence of Spanish and Portuguese demonstrates that the place of C_2 plays a role in syncope. Othewise stated, the occurrence of syncope solely in the context /tsVt/ (i.e. [dzd]), but not other contexts in Portuguese suggests that the coda condition was active in Hispano-Romance. Recall that Chapters 4-5 have demonstrated the significant role of similarity in syncope[184].

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[182] Note that syncope here is rather late, as the voicing of both obstruents demonstrates. In contrast, French shows very early syncope, even involving dorsal codas, cf. PLACITU > *plaktu > *plait,* cf. FACTU > *fait.* Here it is clear that /k/ was not yet /dz/, and /t/ had not yet voiced to /d/ at the time of syncope.

[183] Note that the form LUPICINU (> OS *lobezno,* OP *lobesno/loberno* 'small wolf'), if reliable, suggests that syncope could occur in Portuguese. Although some sources treat this word as native, it is possible that the word has its origins in Castilian.

[184] As mentioned, the syncope in *FĪGICĀRE (S/P *ficar* 'remain') may have been due to such a similarity condition. In light of the earliness of this syncope (cf. I *ficcare*) in contrast to the lateness of syncope of /ts_t/, however, it is possible that different conditions governed these syncope processes during this long span of time. If the form LUCIFER[184] *(Lucifel/Lusbel*) is reliable, then it appears that /ts_f/ was a context for syncope, suggesting that similarity of C_1 and C_2 (i.e. [(d)zb]) is not a predictor of syncope. It then follows that the illformedness of *tsN must be due to phonotactic (i.e. sequential) constraints.

Although there are argument that syncopes between /dzVd/ was motivated by homorganicity (e.g. Harris 1990), there are several well-grounded reasons for dismissing this explanation.

First, there is abundant evidence that certain syncopes failed to occur because of a following nasal, e.g. JUVENE > S joven, P jovem 'young', DECIMA > OP *dízima* 'tithe' (Chapters 4 and 5). More marked places (especially labial) and in the case above more marked segments such as affricates simply could not occur before nasals. This constraint can be formulated as *TN.

(118) *TN.
Plosive (i.e. stop or affricate) + nasal sequences are not wellformed

Second, the resulting sequence /dzd/ is not a geminate, as was the case for syncopes such as *FĪGICĀRE > S/P *fi(n)car* 'remain, drive'. Therefore, it is not possible to invoke Coda Condition explanations (see § 6.5.2).

It is significant that both /s z/ and /ts dz/ pattern with the sonorants as acceptable codas. In word-medial position, where another consonant always follows these two obstruents, it is not entirely surprising that there were co-occurrence restrictions. What is interesting is that the restrictions on what could follow /s/ were much more lenient, e.g. *asno, mesmo*. The greater restrictions on /ts/ may be due to the markedness of this complex segment.

6.3. **Syllabic effects**

Syllabic effects occur above the level of the segment. If statements can be made in relation to the syllable rather than a segment (e.g. C_1, C2, etc.), then it is favorable to take such a measure. Chapters 2 and 3 presented both syncope and apocope data in support of a coda condition in early Romance. The evidence for such a coda condition is summarized in the subsections below.

6.3.1. **Romance coda condition**

As seen in Chapter 3, the deletion of all word-final consonants except the sonorants and /s/ is another instantiation of the coda condition.

(119) Word-final consonants (Latin):

(p)	**t**	**k**
b	**d**	
	s	
m	**n**	
	l, r	

Only /s, n, l r/ survived into early Hispano-Romance. Word-final stops were deleted early on (§ 3.3.2).

(120) Word-final stop deletion

Segment	Latin	PIR	Old Spanish	Old Portuguese	
p/b	SUB	*so	*so*	*so*	‘under’
t/d	AUT	*ow	*o*	*ou*	‘or’
	AD	*a	*a*	*a*	‘to’
k/g	SĪC	*si	*si*	*si(m)*	‘yes’

(121) Word-final consonants (early Hispano-Romance)

***s**
***n (< m, n)**
***l**
(*r)

This deletion is evidence that only sonorants and /s/ were permissible syllable codas.

As seen in Chapters 2 and 3, apocope (word-final vowel deletion) of the inherited front vowels /e i/ applied only after the coronals /ts s n l r/ early on.

(122) Occurrence of apocope in early Hispano-Romance

Context	Latin	PHR	OS	OP	
/ts#/	FACIE	*fats	*faz/haz*	*faz*	'face'
	PACE	*pats	*paz*	*paz*	'peace'
/s#/	MENSE	*mes	*mes*	*mês*	'month'
	POSUIT	*pose	*(puso)*	*pôs*	'he put'
/n#/	CANE	*kan	*can*	*cam*	'dog'
/l#/	SŌLE	*sol	*sol*	*sol*	'sun'
/r#/	MARE	*mar	*mar*	*mar*	'sea'

With the exception of the new affricates /ts dz/[185], the consonants after which apocope applied at this stage corresponded almost identically to those permitted in word-medial coda position in early Hispano-Romance, i.e. the sonorants and /s/.

Based upon all of this evidence, it is clear that early Hispano-Romance only permitted codas which were sonorants or (anterior) coronal sibilants (i.e. /s z/ and /ts dz/).

(123) Coda consonants (early Hispano-Romance)

ts (only word-final)
s
z

[185] Note that intervocalic /ts/ was realized as [dz], and /s/ as [z]. This voicing eventually became phonemic.

n
l, r

Compare the outcomes of the following words in Spanish and Portuguese:

(124) Word-medial CC sequences

Sequence	Latin	PHR	Old Spanish	Old Portuguese	
pt	SEPTE	*sɛ(t)te	*siete*	*sete*	‘seven’
kt	FACTE	*fajte	*fecho/hecho*	*feito*	‘done’
ks	COXA	*k□jʃa	*coxa*	*coixa*	‘thigh’
gn	LIGNA	*lejɳa	*leña*	*lenha*	‘wood’
st	FESTA	*f□sta	*fiesta*	*festa*	‘fest’
mp	SEMPER	*s□mpre	*siempre*	*sempre*	‘always’
nt	ANTE	*ante	*ante(s)*	*ante(s)*	‘before’
lt	*SOLTU	*s□ltu	*suelto*	*solto*	‘loose’
rt	CERTU	*tsɛrtu	*cierto*	*certo*	‘cetain’

As the data above indicates, stops in coda position were either assimilated (e.g. /p/) or vocalized to glides (e.g. /k/ and/g/) in Hispano-Romance. The sonorants and /s/, however, normally entered Spanish and Portuguese unaltered.

Taking into account the loss of such original sequences and the influx of new sequences from syncope as seen in Chapter 5, it is possible to reconstruct the CC sequences in Table 119 for Hispano-Romance. Table 17 (Chapter 1), presenting the CC inventory of Classical Latin is reproduced below as Table 118 for the sake of comparison. Sequences in parentheses occurred early on Hispano-Romance (PHR1), but were lost in both Spanish and Portuguese. For example, the geminate obstruents did not survive into the earliest stages of either language, e.g. SEPTE > *[sɛ(t)te] > *siete/sete* 'seven'. At this stage, it is clear that the only consonants permitted in coda position were the sonorants and sibilants. Furthermore, obstruent + liquid sequences were gapped, with the absence/low frequency of /pl/, /gl/, and /fl/. Although there is debate as to whether /bl/ occurred in early Portuguese (§ 4.2.2.1), it has been included in this reconstruction.

Table 118 **Word-Medial Consonant Sequences (Latin)**

C_2

C_1	**p**	**t**	**k**	**b**	**d**	**g**	**f**	**s**	**h**	**m**	**n**	**l**	**r**
p	pp	pt						ps				pl	pr
t		tt								(tm)	(tn)	(tl)	tr
k		kt	kk					ks				(kl)	kr
b				bb								bl	br
d					dd								(dr)
g						gg				(gm)	(gn)		gr
f													fr
s	sp	st	sk										
h													
m	mp			mb							mn		
n		nt	nk		nd	ng	(nf)	ns					
l	lp	lt	lk	lb	(ld)	lg		ls		(lm)	(ln)		
r	rp	rt	rk	rb	rd	rg	rf	rs		rm	rn		

Table 119 **Word-Medial Consonant Sequences (PHR)**

C_2

C_1

	p	**t**	**k**	**b**	**d**	**g**	**f**	**s**	**m**	**n**	**l**	**r**
p	(pp)										(pl)	(pr)
t		(tt)										tr
k			(kk)									kr
b				(bb)							bl	br
d					(dd)							dr
g						(gg)					(gl)	gr
f												fr
s	sp	st	sk		sd	sg	(sf)	ss	sm	sn	sl	
m	mp			mb						(mm)	ml	mr
n		nt	nk		nd	ng	(nf)		(nn)			nr
l	lp	lt	lk	lb	ld	lg	(lf)		lm	ln	(ll)	lr
r	rp	rt	rk	rb	rd	rg	rf		rm	rn	(rr)	rl

Although Table 119 has been simplified, the outcomes of the Late Latin palatals should also be mentioned, e.g. PLACITU > *[pladz.do] > *plazdo/prazo* 'term'. As seen with apocope, /ts/ and /dz/ came to be permissible word-final codas, e.g. PACE > *[pa.dze] > *[padz] > *paz* 'peace'. In word-medial position, these sequences and many more (especially in Spanish, where there came to be fewer constraints on syncope) arose from later syncopes

6.4. **Phonotactic effects**

Phonotactic effects are those which make specific reference to the pre-existing distribution of sequences or the co-occurrence of sequences. If syncope occurred or failed to occur, it is appropriate to consider whether the presence or absence of such a sequence in the language (i.e. attestation) influenced this outcome. The attestation effect, one of the easiest ways to test the influence of phonotactics on sound change, is examined below.

6.4.1. **Attestation effect**

Neither /bn/ nor /mn/ was inherited by common Hispano-Romance and probably by Western Romance. In the case of Portuguese, which resisted syncope precisely in the environments /bVn/ and /mVn/, this suggests that sequence attestation (i.e. the consonant inventory) of a given language was, to some extent, a predictor of syncope. See Hume (2001) for arguments that metathesis is governed by output attestation, i.e. the pre-existence of the output sequence.

Therefore, /mn/ was probably also initially disfavored because this sequence had been eliminated in Hispano-Romance. However, attestation alone is not a predictor of syncope, since neither /bd/ nor /bn/ existed in Pre-Spanish, yet /bd/ (but not /bn/) came to arise. Therefore, something other than sequence attestation must also be a determining factor of syncope. In the cases considered above, it has been suggested that markedness (e.g. syllable structure constrains, place, etc.) all could influence the outcome of syncope.

6.5. Theoretical implications of this research

This dissertation has borne evidence suggesting that the wellformedness of an output sequence of vowel deletion processes like syncope and apocope is, at least in part, controlled by the pre-existing sound pattern of a given language.

There are cases, however, in which syncope occurred, producing an unattested sequence which is "repaired" by some phonological process (consonant deletion, e.g. /mpVt/ > */mt/ > /nt/; consonant epenthesis, e.g. /mVl/ > */ml/ > /mbr/; dissimilation *cum* epenthesis e.g. /mVn/ > /mn/ > /mbr/; metathesis of /d/ and /w/ in certain preconsonantal contexts, e.g. /tVl/ > /dl/ > /ld/. In all of these cases, the output sequence ends up conforming with the existing phonotactics of the language.

Consider the case of syncope in which an illicit CCC sequence was initially produced, e.g. COMPUTĀRE > *[komptar] > *contar* 'count, tell', *ANTEPARĀRE > *[antparar] > *amparar* 'protect', etc. Deletion of C_2 in the $C_1C_2C_3$ input sequence, however, occurred, licensing the wellformed CC output. If these events are viewed as automatic or simultaneous, then it appears that the phonotactics has not changed. In the remainder of this chapter, we examine how the popular framework of Optimality Theory (Prince and Smolensky 1993) can handle the interaction of phonotactic constraints and syncope.

6.5.1. **Optimality Theory**

In an Optimality Theory (Prince and Smolensky 1993) framework, henceforth OT, a cover markedness constraint SYNC can be assumed to trigger syncope when the prosodic and metrical conditions permit (i.e. unstressed). Although more of a segmental property, sonority (i.e. only the non-low vowels are eligible for syncope) is also included in the SYNC constraint. The faithfulness anti-syncope constraint MAXV always ensures the maximal surfacing of all input vowels.

(125) OT constraints (Prince and Smolensky 1993)

SYNC (cover constraint)
Syncopate when the prosodic, metrical, and segmental conditions permit.

MAXV
Do not syncopate.

When MAXV is ranked above SYNC, syncope will not occur in any context. As we know, however, even in Classical Latin there were early cases of syncope (e.g. POS(I)TUS 'put'). Thus, even at this early stage, MAXV could not have been completely undominated. As Chapter 4 discussed, by Hispano-Romance syncope became rampant in contexts conforming with the Coda Condition, permitting sonorants and /s/ in coda.

(126) CODACOND
Only sonorants and /s/ may appear in syllable coda.

In Classical Latin, syncope was presumably variable in forms like POS(I)TUS 'put'. At the stage in in which syncope became obligatory in post-sonorant contexts, the following ranking obtained.

(127) Syncope in Late Latin/early Romance

/positu/ /wiride/	CODACOND	SYNC	MAXV
pósitu		*!	
☞postu			*
wíride		*!	
☞wirde			*

Although the ranking of SYNC >> MAXV allowed syncope, syncope could only occur if the resulting output did not violate CODACOND.

(128) Non-syncope in Late Latin/early Romance

/plakitu/	CODACOND	SYNC	MAXV
☞plákitu		*!	
plaktu	*!		*

Since /k/ was not an acceptable coda at this stage, syncope was blocked.

At this stage, syncope also failed to occur when a complex coda emerged, e.g. COMPUTĀRE > **[komp.ta.re] ‘count, tell’. The OT constraint militating against complex codas is *COMPLEX CODA (*CXCODA).

(129) *COMPLEX CODA (*CXCODA)
Codas must be non-branching

Ranking this markedness constraint also above SYNC blocks syncope.

(130) Blocking of syncope leading to complex coda in Proto-Romance

/komputare/	*CXCODA	CODACON	SYNC	MAXV
☞komputare			*	
komptare	*!			*

Thus the output [komp.ta.re] was not wellformed because of its violation of *CXCODA.

However, very early on syncope was extended to this context (Chapter 5). This seems to imply a tolerance of complex codas. In OT, such a change is captured by demoting *CXCODA below SYNC.

(131) Demotion of *CXCODA in Hispano-Romance

/komputare/	CODACON	SYNC	MAXV	*CXCODA
komputare		*!		
☞komptare			*	*

However, it is known that no intermediate stage ***comptar(e)* is attested in Hispano-Romance. Only the unreduced form *cuémpetet* and syncopated forms such as *contar* are attested. Thus the OT constraint *CXCODA must have triggered consonant deletion in a $[C_1C_2.C_3]$ sequence like that of *[komp.ta.re][186]. In order for this to have ensued, the anti-deletion constraint (MAXC) must have beeen demoted below *CXCODA.

(132) MAXC
Do not delete a consonant.

(133) Complex coda simplification in Hispano-Romance

/komputare/	CODACON	SYNC	MAXV	*CXCODA	MAXC
komputare		*!			
komptare			*	*!	
☞komtare			*		*

[186] By ranking *Complex lower on the constraint hierarchy than a constraint triggering syncope (Syncope, for simplicity), one could achieve deletion in cases in which a complex coda would otherwise emerge, i.e. Syncope >> MaxV, *Complex >> MaxC.

As discussed in Chapter 5, syncope almost always occurred when a complex onset, rather than coda, could be formed, e.g. *COMPERĀRE > *[kom.pra.re] 'buy', etc. The failure of consonant deletion to take place here (e.g. **[komrar]) demonstrates the different ranking of these two members of the *COMPLEX family of constraints (Prince and Smoloensky, 1993), *COMPLEX ONSET (*CXONSET) and *COMPLEX CODA (*CXCODA). In the case of *COMPLEX ONSET, the crucial ranking preventing consonant deletion is MAXC >> *CXONSET.

(134) Syncope leading to complex onset

/komperare/	CODACON	SYNC	MAXV	*CXCODA	MAXC	*CXONSET
komperare		*!				
☞komprare			*			*
konrare			*		*!	

Chapters 4-5 examined the constraints on syncope. In this discussion, two major types of "active" markedness contraints emerged. Constraints such as *rCr (Type 1) prevent the occurrence of syncope in both Spanish and Portuguese, e.g. OS *tórtora,* ***tortra* 'turttle-dove', while constraints such as those above (Type 2), e.g. *CXCODA, *CXONSET, fail to block syncope, but may alter its output, i.e. **[komptare] > *contar*. A ranking of a stable undominated constraint such as*rCr is given below.

(135) Stable Undominated Constraint (Type 2)

/tortora/	*rCr	SYNC	MAXV
☞tortora		*	
tortra	*!		*

The constraint *rCr yields the correct unsyncopated output only when ranked above SYNC, i.e. :(indicates an unhappy candidate. If *rCr is not undominated, syncope will occur

(136)

/tortora/	SYNC	MAXV	*rCr
:(tortora	*!		
tortra		*	*

When all of the constraints discussed above are ranked together, some problems emerge.

(137)

	*rCr	SYNC	MAXV	*CXCODA	MAXC	*CXONSET
:(tortora		*!				
tortra	*!		*			*
☞torra			*		*	
komperar		*!				
☞komprar			*			*
konrar			*		*!	
komputar		*!				
komptar			*	*!		
☞komtar			*		*	

For the input /tortora/, the most optimal candidate is one in which consonant deletion applied, i.e. **[torra], analogous to /komputar/ > [kontar]. Clearly, it is the case the case that, even if [rtr] had however temprarily arose, the sequence [tr] would have formed a complex onset, and not a complex coda [rt]. How can this be captured in OT?

An acoustic/perceptual account of the data (e.g. along the lines of Coté 2001) could argue that deletion in contexts where perceptual cues are stronger is universally more difficult. Stops have formant structure in prevocalic (CV) or postvocalic contexts (VC). When between two obstruents, however, the formant structure and stop burst of a stop is weak. The formant structure of a stop between two liquids, although not as defined as when intervocalic, is also significantly more defined than a stop between two obstruents. In light of these acoustic facts, a universal ranking MAXC /_V > MAXC/ V_ >> MAXC. Constraints such as these which take into account the perceptual cues of segments in different phonological positions are also referred to as positional constraints (e.g. Flemming 1997).

(138) OT perception/positional based constraints (based on Coté 2001)
MAXC /V_ >> MAXC /_V >> MAXC

MAXC /_V:
Do not delete a consonant that is followed by a vowel.

MAXC /V_
Do not delete a consonant that is preceded by a vowel.

To the extent that this relates to syncope, consonant (particularly, stop) deletion rescued syncope only when acoustic or perceptual cues were weak. This was the case between two obstruents, and never when a vocalic segment (or liquid) followed, e.g. [komprar], **[tortre], etc. Along these lines, syncope *cum* consonant deletion was less likely to occur after a consonant in a postvocalic context (V<u>C</u>(V)CV), where perceptual cues were stronger, than after a consonant in a postconsonantal context (VC<u>C</u>(V)CV), where perceptual cues were weaker. The constraint MaxC//V refers to a consonant either preceded or followed by a vocalic (or approximate) segment, or both.

(139) Positional deletion

	MAXC//V	*rCr	SYNC	MAXV	*CXCODA	MAXC	*CXONSET
☞tortora			*				
tortra		*!		*			*

torra	*!			*		*	
komperar			*!				
☞komprar				*			*
konrar	*!			*		*	
komputar			*!				
komptar				*	*!		
☞komtar				*		*	

In the case of $C_1(V)C_2$ syncope (Chapter 4), the deletion of C_1 rarely licensed syncope. A constraint on the type of codas (i.e. CodaCond) *a priori* could trigger consonant deletion of any non-sonorant or /s/ coda in an emerging *[$C_1.C_2$] sequence. In Portuguese, CodaCond was undominated, normally blocking syncope, while in Spanish the relatively low ranking of CodaCond allowed syncopes resulting in stop codas of various places of articulation.

(140) Coda Condition in Portuguese

/nadega/	MaxC//V	CodaCond	Sync	MaxV	MaxC
☞nádega			*		
nadga		*!		*	
naga	!*			*	*

(141) Coda Condition in Spanish

/nadega/	MaxC//V	Sync	CodaCond	MaxV	MaxC
nádega		*!			
☞nadga			*	*	
naga	!*			*	*

Although CodaCond was relatively low ranked in Spanish, the high ranking of MaxC//V still prevented the deletion (of C_1) in C_1C_2 outputs such as OS *judgar* ‘judge’, *cibdat* ‘city’, etc.

6.5.2. **Simultaneity and Phonotactic Change**

Because OT is concerned only with surface output phonotactics, intermediate stages which may have violated existing phonotactic constraints (e.g. **[komp.ta.re]) are considered to have been altered simultaneously to the least marked structure (i.e. [kom.tar.re] or [kon.ta.re]). Simply put, the most wellformed output always immediately emerges.

In the study of phonotactic change, however, it is necessary to question whether such "simultaneity" also obtained historically. If it can be shown that such intermediate stages existed, perhaps in a state of variation with the older form, then it appears that the repair of illicit sequences was not simultaneous. Furthermore, if it is not possible to formulate a set of constraints which can be ranked so as to produce the actual outputs, then an alternative account should be investigated. In this section, it is shown that a simultaneous account of syncope and phonotactic change is problematic and should be abandoned in favor of a gradient or stepwise account.

In the case of $C_1C_2(V)C_3$ syncope, at first blush it appears that there is no evidence to dispute the simultaneity claim. In the absence of attested intermediate forms such as ***comptar(e)*, it is possible that the sequence **[mpt] was immediately resolved to more acceptable [nt], i.e. *contar*.

It is known that Late Latin witnessed the reduction of earlier complex codas, e.g. /emptus/ > [emtus] 'bought', /sekstus/ > [ses.tus] 'sixth' (Grandgent 1907). This change implies the ranking *CXCODA >> MAXC. Furthermore, earlier CC sequences, although altered, failed to delete the first consonant, implies a ranking MAXC >> *CODACOND >>, e.g. /septem/ > *[set.te] (> *[se.te]) 'seven'. By implication, the ranking for Late Latin is then *CXCODA >> MAXC >> CODACOND. On the simultaneous syncope account, the later occurrence of syncope in Hispano-Romance implies the simultaneous demotion of both *CXCODA and MAXC below SYNC.

(142) Simultaneous syncope account

Blocking of SYNC *cum* CXCODA reduction (Late Latin)

/komputare/	*CXCODA	MAXC	SYNC	MAXV
☞komputare			*	
komptare	*!			*
komtare		*!		*

SYNC *cum* CXCODA reduction (Hispano-Romance)

/komputare/	SYNC	MAXV	*CXCODA	MAXC
komputare	*!			
komptare		*	*!	
☞komtare		*		*

(143) Simultaneous syncope acccount (complex codas)

Late Latin

*CXCODA >> MAXC >> SYNC >> MAXV

Hispano-Romance

SYNC >> MAXV >> *CXCODA >> MAXC

Not all cases of $C_1(C_2)C_3$ containing a medial stop, however, syncopated, e.g. CĒSPITE > S *césped,* P *céspede* 'lawn', HOSPITE > S *húesped,* P *hóspede* 'guest'. These facts suggest that other consonants in the $C_1(C_2)C_3$ string may have played an important role in syncope. In the first two examples above, since it is clear that syncope could occur when C_2 and C_3 were the stops /p/ and /t/ respectively (cf. COMPUTĀRE > S/P *contar*), the lack of syncope can be attributed to C_1, here /s/. Thus, the potential output */spt/ must have been disfavored. Furthermore, in light of the absence of syncope in VESPERA and all other cases of $C_1(C_2)C_3$ containing /s/ as C_1 (cf. MESPILU > OS *niéspero,* OP *nespera* ‘medlar-tree’), it seems that there was a contraint on /sp/ in Hispano-Romance. This constraint was formulated as *spC (§ 5.2.1).

Compare the different predictions when the above rankings are applied to CĒSPITE (> S *césped,* P *céspede* ‘lawn’) and EPISCOPU (> S *osbipo,* P *bispo* ‘bishop’).

(144) Simultaneous account of syncope

Blocking of SYNC *cum* CXCODA reduction (Late Latin)

/komputare/, /episkopu/, /kespite/	*CXCODA	MAXC	SYNC	MAXV
☞komputare			*	
komptare	*!			*
komtare		*!		*
☞epískopu			*	
episkpu	*!			*
epispu		*!		*
☞késpite			*	
kespte	*!			*
keste		*!		*

SYNC *cum* CXCODA reduction (Hispano-Romance)

/kompudare/, /obiskobu/, /tsespede/	*spC	SYNC	MAXV	*CXCODA	MAXC
kompudare		*!			
komptare			*	*!	
☞komtare			*		*
obískobu		*!			
obiskpu			*	*!	
☞obispu			*		*
:(tséspede		*!			
tsespte	*!		*	*	
☞tseste			*		*

On the simultaneous account of syncope, the constraint *spC only applies to an output containing all segments of the sequence /spC/. Therefore, although an output [tsespte] violating *spC is always suboptimal, a wellformed (yet uattested) output [teste] can always surface by deleting /p/, in the same way that [obispu] surfaces by deleting /k/. It is unclear how the simultaneous account can handle the different developments of cases like these.

On the stepwise syncope account, however, it is clearly possible to for all the data. Below, this scenario is illustrated with COMPUTĀRE (> S/P *contar*), EPISCOPU (S *obispo*, P *bispo*), and CĒSPITE (> S *césped,* P *céspede* 'lawn').

(145) Stepwise syncope account

Stages 1-2: Blocking of SYNC *cum* CXCODA reduction (Late Latin)

/komputare/, /episkopu/, /kespite/	*CXCODA	MAXC	SYNC	MAXV
☞komputare			*	
komptare	*!			*
komtare		*!		*
☞epískopu			*	
episkpu	*!			*
epispu		*!		*
☞késpite			*	
kespte	*!			*
keste		*!		*

Stage 3a: Syncope *sine* complex coda reduction (early Hispano-Romance)

/kompudare/, /obiskobu/, /tsespede/	*spC	MAXC	SYNC	MAXV	*CXCODA
kompudare			*!		
☞komptare				*	*
komtare		*!		*	
obískobu			*!		
☞obiskpu				*	*
obispu		*!		*	
☞tséspede			*		
tsespte	*!			*	*
tseste		*!		*	

Stage 3b: Syncope *sine* complex coda reduction, alternate URs (early Hispano-Romance)

/komptare/,	*spC	DEPV	MAXC	SYNC	MAXV	*CXCODA

/obiskpu/, /tsespede/						
kompetare		*!		*		
☞komptare						*
komtare			*!			
obískepu		*!		*		
☞obiskpu						*
obispu			*!			
☞tséspede				*		
tsespte	*!				*	*
tseste			*!		*	

In Stage 1 (Late Latin), although syncope occurred in some CVC strings, syncope could not occur in CCVC strings. In Stage 2, syncope spread to CCVC contexts. During this phase, complex codas were not reduced. Only certain wellformed complex codas like /obiskpo/ are generated and retained due to the low ranking of *CXCODA. Here the output /tsespte/ is ruled out by the high ranking of *spC. The only difference between 2a and 2b is the choice of underlying forms (URs). Whether the choice is the original unsyncopated forms (2a) or newer syncopated forms (2b), the outputs will be the same with the introduction of a new constraint prohibiting vowel epenthesis in shorter forms.

(146) DEPV
Do not epenthesize a vowel

Thus vowel epenthesis (e.g. /obiskpu/ > [obískepu]) is not possible because of the ranking of DEPV, the anti-epenthesis constraint.

By Stage 4a, it is apparent that the syncope was no longer a productive syncrhonic process. Thus the ranking of SYNC and MAXV had reversed. After this reranking, he previous relexicalization of forms like /komptare/ guarantees the surfacing of the correct outputs.

Stage 4a: Loss of syncope (Pre-Spanish, Pre-Portuguese)

/komptare/, /obiskpu/, /tsespede/	DEPV	MAXC	MAXV	SYNC	*CXCODA
kompetare	*!				
komptare					*!
☞komtare		*			
obískepu	*!				
obiskpu					*!
☞obispu		*			
☞tséspede					
tsespte			*		*
tseste			*!		

In Stage 4b, complex codas are reduced, reflected in the demotion of MAXC. Notice that /obiskpu/ always surfaces as [obispu], and /tsespede/ can no longer syncopate at this stage due to the promotion of MAXV, and perhaps also the retention of *spC (removed here for simplicity). Although Stages 4a and 4b are separated here for clarity, there is nothing preventing the simultaneity of these two events. What is clear, however, is that Stage 4 was an independent innovation in both Spanish and Portuguese.

Stage 4b: Elimination of complex codas (Pre-Spanish, Pre-Portuguese)

/komptare/, /obiskpu/, /tsespede/	DEPV	MAXV	SYNC	*CXCODA	MAXC
kompetare	*!				
komptare				*!	
☞komtare					*
obískepu	*!				
obiskpu				*!	
☞obispu					*
☞tséspede			*		
tsespte		*!		*	
tseste		*!			*

Although the stepwise account involves more theoretical machinary than the simultaneous account as formulated above, it can generate the correct outputs of a syncopated CCVC string. The reason for this is that, with the loss of syncope, the outputs affected by the initial wave of syncope are obligatorily relexicalized as syncopated inputs. Otherwise stated, Stage 2 /komptare/ or /kompudare/ can only be represented as /komptare/ in Stage 3. When complex codas came to be reduced, only those forms already syncopated, e.g. /komptare/ and /obiskpu/, could undergo this change. Furthermore, the stepwise account has the added advantage of being able to explain the regressive or anticipatory assimilation seen in developments like /kompudare/ > *[kompdare] > [kontar(e)] (§ 5.2.1). If syncope and reduction had been simultaneous, it seems unlikely that the deleted consonant could have triggered such a spread of voicing.

The interaction of other phonotactic constraints with syncope also provides more support for the stepwise mechanism of syncope and phonotactic change. Attempting to force the simultaneous syncope of all CVC strings leading to an output in conformity with the Coda Condition runs into problems. Although it is clear, that syncope eventually comes to apply after almost all sonorant and sibilant consonants, our study of lenition (particularly obstruent voicing) revealed that syncope occurred later (i.e. after voicing) of intervocalic stops. Therefore, syncopes such as /postu/ and /kaldu/ are earlier than those of /komite/ > *conde*, etc. A simultaneous account (e.g. Hartkemeyer 2000) ranks CODACOND above SYNC, forcing all postsonorant syncopes before lenition. In the account given below, the other MaxC constraint, MaxC//V is required, since, unlike VCCCV sequences, normal VCCV contexts, whether or not from syncope, remain unaltered.

(147) Simultaneous syncope account

Early syncope after all sonorants

/positu/, /kalidu/ /komite/, /omine/, /kubitu/	MAX C//V	CODA COND	SYNC	MAXV
positu			*!	
☞postu				*
kalidu			*!	
☞kaldu				*
:(komite			*!	
☞ komte				*
:(omine			*!	
☞omne				*
☞kubitu			*	
kubtu		*!		*
kuto	*!			*

As the above tableau illustrates, ranking CODACOND above SYNC predicts that all sonorants/sibilants, regardless of C_2, should be possible outputs of syncope. This suggests that some wellformedness constraint must have outranked CODACOND. Of all potential [C.C] outputs, only /st/, /nd/, /ld/, and /rd/, were wellformed syncope outputs at this early stage, which amounts to ranking each illformed sequence (e.g. sonorant + voiceless stop (RT), /mn/, etc.) above CODACOND in the following manner.

(148) Stepwise syncope account

Stage 1: Early syncope after some sonorants, modified (Late Latin)

/positu/, /kalidu/ /komite/, /omine/, /kubitu/	MAXC //V	*RT, *mn, etc.	CODA COND	SYNC	MAXV
positu				*!	
☞postu					*
kalidu				*!	

☞kaldu					*
☞komite				*	
komte		*!			*
☞omine					
omne		*!			*
☞kubitu				*	
kubtu			*!		*
kuto	*!				*

This analysis does not prevent sequences like /mn/, /nt/, /lt/, /rt/ from occurring, but rather predicts such sequences will not occur as the outputs of syncope. Such primary (inherited sequences) will always surface, since the faithfulness constraint MAXC//V guarantees their survival, e.g. PARTU > S/P *parto* 'birth', SOMNU > *sonnu > S *sueño,* P *sono* 'sleep'.

By Stage 2, due to the differences in the interaction of voicing and syncope in forms like /postu/ versus /komite/ > */komde/, a relexicalization of the early syncope outputs had to have taken place. Although all sonorant + stop sequences eventually became acceptable syncope outputs, it is known that sequences like /mn/ only arose in Spanish. The (re)ranking of *mn with respect to SYNC produced this difference. The tableau below represents the state of affairs after relexicalization and spread of syncope to most other sonorant/sibilant codas after lenition.

Stage 2: Spread of syncope to all postsonorant contexts but /mVn/ (early Hispano-Romance)

/postu/, /kaldu/ /komide/, /omine/, /kovidu/	MAXC //V	DEPV	*mn	CODA COND	SYNC	MAXV
pósetu		*!			*	
☞postu						
káledu		*!			*	
☞kaldu						

kómide					*!	
☞komde						*
☞omine					*	
omne			*!			*
one	*!					
☞kóvidu					*	
kovdu				*!		*
kodu	*!					*

The tableau above basically represents the state of affairs early Hispano-Romance, with the exception of the loss of syncope and a likely relexicalization of /komide/ as /komde/ or /konde/. The constraint militating against /mn/ blocked syncope in Portuguese but not in Spanish.

Stage 3: Relexicalization (late Hispano-Romance)

/postu/, /kaldu/ /komde/, /omine/, /kovidu/	MAXC //V	DEPV	*mn	CODA COND	SYNC	MAXV
pósitu		*!			*	
☞postu						
kálidu		*!			*	
☞kaldu						
kómide		*!			*	
☞komde						*
☞omine					*	
omne			*!			*
☞kóvidu					*	
kovdu				*!		*
kodu	*!					*

The demotion or elimination of *mn in early Spanish produced this difference. By Stage 4, the Coda Condition had become inactive in Spanish, as evidenced by the spread of syncope to forms like CUBITU > OS *cobdo* 'elbow'.

Stage 4a: Spread of syncope (Pre-Spanish)

/postu/, /kaldu/ /komde/, /omine/, /kovido/	MAXC //V	DEPV	SYNC	MAXV	CODACOND
puéseto		*!	*		
☞puesto					
káledo		*!	*		
☞kaldo					
kónede		*!	*		
☞konde				*	
omine			*!		
☞omne				*	
one	*!				
kóvido			*!		
☞kovdo				*	*
kodo	*!			*	

Subsequent to the emergence of complex codas, prenasal consonants, and stop codas via syncope, syncope was lost as a synchronic process in Spanish. In Portuguese, syncope was lost after Stage 3. This is reflected by a reranking of MAXV >> SYNC, as demonstrated by the tableau below for Spanish.

Stage 4a: Relexicalization and loss of syncope (Pre-Spanish)

/postu/, /kaldu/ /komde/, /omne/, /kovdo/	MAXC //V	DEPV	MAXV	SYNC	CODACOND
puéseto		*!		*	
☞puesto					
káledo		*!		*	
☞kaldo					
kónede		*!		*	
☞konde			*		
ómene		*!		*	
☞omne					
one	*!				
kóvedo		*!		*	
☞kovdo					*
kodo	*!		*		

Although the demotion or loss of the constraint *mn failed to block syncope in Spanish, the sequence /mn/ was eventually altered by dissimilation (/mr/) and consonant epenthesis to /mbr/, e.g. /omne/ > */omre/ > /ombre/ 'man'. The simultaneous account is capable of accomplishing these changes in one fell swoop, as the tableau below illustrates. The anti-consonant-epenthesis constraint is DEPC, and the constraint enforcing the identity of an input and output consonant is IDENTC.

(149) Simultaneous account (Spanish)

Stage 1: /mVn/ in Hispano-Romance

/omine/	MAXC //V	DEPV	IDENT C	DEPC	*mn	SYNC	MAXV	CODACOND
☞omine						*		
omne					*!			
om(b)re			*!	*			*	

Stage 2: /mbr/ in Old Spanish

/omine/	MAX C //V	DEPV	SYNC	MAXV	*mn	IDENTC	DEPC	CODA COND
omine			*!					
omne				*	*!			
☞om(b)re				*		*	*	

(150) DEPV
'Do not epenthesize a consonant'

IDENTC
'Do not alter the features of a consonant'

However, it is known that the form *omne* existed early on. Only the stepwise account of syncope can account for the fact that the change from syncope of /mVn/ to /mbr/ passed through a well-attested intermediate stage with /mn/. The only difference between the case at hand and the other cases involving the CXCODA constraint is that, in light of well-attested intermediate forms such as *omne*, the mechanism of change here is clearly not simultaneous, and the presence of the intermdiate stage attests to the change in suface phonotactics.

The case of /mVn/ is not unlike the case of /ndVn/ and /ngVn/, e.g. LENDINE > OS *liendre*, OP *lêndea* ‘nit’, SANGUINE > OS *sangne*, OP *sangue* ‘blood’. Here there is also evidence that intermediate forms (e.g. *sangne*) existed in Old Spanish, demonstrating that the phase proposed for *[komptare] in which complex codas were wellformed (Stages 3-4) is actually attested. The interaction of the constraints militating against prenasal stops and nasal + nasal sequences like /mn/ is illustrated below.

(151) Stepwise syncope account

Stages 1-2: Blocking of SYNC *cum* CXCODA reduction (Late Latin)

/komputare/, /sangine/	*NN, *TN	*CXCODA	MAXC	SYNC	MAXV
☞komputare				*	
komptare		*!			*
komtare			*!		*
☞sangine				*	
sangne	*!	*!			*
sanne			*!		

Between Stages 1-2 and 3 (Hispano-Romance), complex codas emerge whenevever possible. The constraint *TN, however, presents the appearance of NTN sequences like *[sangne].

Stage 3: Syncope *sine* complex coda reduction (late Hispano-Romance)

/kompudare/, /sangine/	*NN, *TN	MAXC	SYNC	MAXV	*CXCODA
kompudare			*!		
☞komptare				*	*

komtare		*!		*	
☞sangine			*		
sangne	*!			*	*
sanne		*!		*	

Stage 3b: Syncope *sine* complex coda reduction, alternate URs (late Hispano-Romance)

/komptare/, /sangine/	*NN, *TN	DepV	MaxC	Sync	MaxV	*CxCoda
kompetare		*!		*		
☞komptare						*
komtare			*!			
☞sangine				*		
sangne	*!				*	*
sanne		*!			*	

Complex codas like [komptare] servive into early Spanish, though there may have been variation early on[187], as suggested by early forms like *cuémpetet* (for later *cuente*) 'may count'. Such forms also presumably survived into early Portuguese. Unlike Old Portuguese, however, Old Spanish extends syncope to prenasal contexts such as *omne* and *sangne*.

Stage 4a: Further spread of syncope to prenasal contexts (Old Spanish)

/komptare/, /sangine/	DepV	Ident C	Max C	Sync	MaxV	*CxCoda	*NN, *TN
kompetare	*!			*			
☞komptar						*	
komtare			*!				
sangine				*!			
☞sangne					*	*	*
sanne			*!		*		

[187] This form could be analyzed as continuing an unsyncopated form or as emerging from vowel epenthesis of a UR /kuempte/.

By Stage 4b, syncope had been lost as a synchronic process. Complex codas were next eliminated, by either deletion (/kontar/) or dissimilation in N(C)N strings (*omne, sangne*), reflected below in the demotion of the faithfulness constaint IDENTC.

Stage 4b: Relexicalization, loss of syncope, elimination of complex codas (Old Spanish)

/komptare/, /sangne/	DEP V	MAX V	SYNC	MAXV	*CXCODA	MAXC	*NN, *TN	IDENTC
kompetar	*!		*					
komptar					*!			
☞kontar						*		*
sángene	*!		*					
sangne					*!			
sanne						*!	*	
☞sangre								*

Another similar case is the syncope leading to homorganic /dzd/, e.g. PLACITU > *[pladzidu] > *[pladzdu] > OS *plaz(d)o*, OP *prazo* 'term'. The retention of /dzd/ early on in Spanish suggests that this was also probably the case in early Old Portuguese. In order for this sequence to have arisen in Old Portuguese, however, it could not have violated coda condition, permitting only a sonorant or sibilant C_1. Although *praz(d)o* involves a sibilant affricate, other forms containing the same sibilant failed to undergo syncope when a heterorganic segment followed, e.g. DECIMA > *[dedzima] > *dízima* 'tithe', ***dizma* (§ 4.2.2.2). This suggests that either /dz/ was not an acceptable coda word-medially or that sibilant affricate + nasal sequences such as /dzm/ and /dzn/ were not wellformed/. The most powerful argument that /dz/ was a wellformed coda is that /dz/ came to exist word-finally via apocope, e.g. VICE > *vedze* > OS/OP *vez* /vedz/ 'time'.

Therefore, it must be the case that /dzm/ and /dzn/ were not wellformed sequences. In Chapters 4 and 5, there is abundant evidence that certain syncopes fail to occur because of a following nasal, e.g. JUVENE > joven 'young'. More marked places (especially labial) and in the case above more marked segments such as affricates simply could not occur before nasals. This constraint was formulated as *TN.

(152) *TN.
Plosive (i.e. stop or affricate) + nasal sequences are not wellformed

All of the discussed constraints and sample derivations are given in the Table 120 below, for the major stages from Late Latin to Old Spanish and Old Portuguese.

Table 120 **Stepwise syncope account**

Stage 1: Late Latin

	MaxC //V	DepV	MaxC	IdentC	*RT, *TN, *NN, *rCr, *spC, etc.	*CxCoda	CodaCond	Sync	MaxV	*CxOnset
positu								*!		
☞postu									*	
kalidu								*!		
☞kaldu									*	
☞komite								*		
komte					*!				*	
☞omine								*		
omne					*!				*	
om(b)re			*!	*					*	
☞kubitu								*		
kubtu							*!		*	
kuttu				*!					*	
plakitu								*		
☞plaktu							*!		*	
plattu				*!					*	
☞dekimu								*		
dekmu							*!		*	
demmu				*!					*	
matutinu								*!		
☞mattinu									*	
☞komputare								*		
komptare						*!			*	
komtare			*!						*	
☞epískopu								*		
episkpu						*!			*	
epispu			*!						*	
☞késpite								*		
kespte						*!			*	
keste			*!						*	
☞sángine								*		
sangne					*!	*		*	*	*
sanne			*!		*	*		*	*	*
sangre				*!				*	*	*
lɛpore								*!		
☞lɛpre									*	*
komperare								*!		
☞komprare									*	*
komrare	*!		*							
☞arbore								*		
arbre					*!				*	
arre	*!		*						*	

Stage 2: Early Hispano-Romance

	MAXC /V	DEPV	MAXC	IDENTC	*RT, *TN, *NN, *rCr, *spC, etc.	CODACOND	SYNC	MAXV	*CXONSET	*CXCODA
positu		*!								
☞postu										
kalidu		*!								
☞kaldu										
komide							*!			
☞komde								*		
☞omine							*			
omne					*!			*		
om(b)re			*!	*				*		
☞kóvidu							*			
kovdu						*!		*		
koddu				*!				*		
pládzidu							*!			
☞pladzdu								*		
pladdu				*!				*		
☞dédzimu							*			
dedzmu					*!			*		
demmu				*!				*		
matutinu		*!								
☞mattinu								*		
kompudare							*!			
☞komptare								*		*
komtare			*!					*		
(e)bískobu							*!			
☞ (e)biskpu								*		*
(e)bispu			*!					*		
☞tséspide							*			
tsespte					*!			*		*
tseste			*!					*		
☞sángine							*			
sangne					*!		*	*		*
sanne			*!		*		*	*		*
sangre				*			*	*		
lɛbere		*!								
☞lɛbre									*	
komperare		*!								
☞komprare									*	
komrare	*!		*							
☞árbore							*			
arbre					*!				*	
arre	*!		*							

Stage 3: Late Hispano-Romance

	MAXC /V	DEPV	IDENTC	*mn, *rCr, *spC, *TN	CODACOND	SYNC	MAXV	*CXONSET	*CXCODA	MAXC
positu		*!								
☞postu										
kalidu		*!								
☞kaldu										
komide						*!				
☞komde							*			
☞omine						*				
omne				*!			*			
om(b)re			*!				*			
☞kóvidu						*				
kovdu					*!		*			
koddo			*!				*			
pládzidu						*!				
☞pladzdo							*			
pladdo			*!				*			
☞dedzimu						*				
dedzmu				*!			*			
demmu			*!				*			
matutinu		*!								
☞mattinu							*			
komputare		*!								
☞komptare							*		*	
☞komtare							*			*
(o)bískepu		*!								
☞ (o)biskpu							*		*	
☞ (o)bispu							*			*
☞tséspide						*				
tsespte				*!			*		*	
tseste							*			*!
☞sángene						*				
sangne				*!			*		*	
sanne				*!			*		*	*
sangre			*!				*			
lɛbere		*!								
☞lɛbre								*		
komperare		*!								
☞komprare								*		
komrare	*!									*
☞árbore						*				
arbre				*!				*		
arre	*!									*

Stages 4a: Pre-Portuguese (Loss of syncope)

	MAXC //V	DEPV	IDENTC	*NN, *rCr, *spC, *TN	CODACOND	MAXV	SYNC	*CXONSET	*CXCODA	MAXC
pósetu		*!					*			
☞postu										
káledu		*!					*			
☞kaldu										
kónede		*!					*			
☞konde										
☞omene							*			
omne				*!		*				
om(b)re			*!			*				
☞kóvedu							*			
kovdu					*!	*				
koddu			*!			*				
kodu	*!									*
pládzedu		*!					*			
☞pladzdu										
pladdu			*!							
pladu	*!									*
☞dídzima							*			
didzma				*!		*				
dimma			*!	*		*				
dima	*!									*
kompetare		*!					*			
komptare									*!	
☞komtare										*
(o)bískepu		*!					*			
(o)biskpu									*!	
☞ (o)bispu										*
☞sángene							*			
sangne				*!		*			*	
sanne				*!		*			*	
sangre			*!			*				*
☞tséspede							*			
tsespte				*!		*			*	
tseste						*!				*
lɛbere		*!					*			
☞lɛbre								*		
komperare		*!					*			
☞komprare								*		
komrare	*!									*
☞árvore							*			
arvre				*!				*		
arre	*!									*

Stages 4a: Pre-Spanish (Spread of syncope)

	MAXC //V	DEPV	IDENTC	*rCr , *spC	SYNC	MAXV	*CXONSET	MAXC	*CXCODA	CODACOND	*NN, *TN
puéstu		*!			*						
☞puestu											
káledu		*!			*						
☞kaldu											
kónede		*!			*						
☞konde											
omene					*!						
☞omne						*					
om(b)re			*!			*					
kóvedu					*						
☞kovdu						*				*	
koddu			*!			*					
kodu	*!					*		*			
pládzedu		*!			*						
☞pladzdu											
pladdu			*!								
pladu	*!							*			
djédzemu					*!						
☞djedzmu						*					
djemmu			*!			*					
djemu	*!							*			
kompetare		*!			*						
☞komptare									*		
komtare								*!			
(o)bískepu		*!			*						
☞ (o)biskpu									*!		
(o)biskpu								*!			
☞tséspide					*						
tsespte				*!		*			*		
tseste						*!		*			
sángine					*!						
☞sangne									*		
sanne								*!	*		
sangre			*!							*	
lɛbere		*!			*						
☞lɛbre							*				*
komperare		*!			*						
☞komprare							*				*
komrare	*!							*			
☞árbore					*						
arbre				*!			*				*
arre	*!							*			

Stages 4b: Pre-Spanish (loss of complex codas)

	MaxC //V	DepV	*rCr , *spC	MaxV	Sync	*CxOnset	*CxCoda	MaxC	*NN, *TN	IdentC	CodaCond
puéstu		*!			*						
☞puestu											
káledu		*!			*						
☞kaldu											
kónede		*!			*						
☞konde											
omene		*!			*						
omne									*!		
☞om(b)re										*	
kóvedu		*!			*						
☞kovdu											*
koddu										*!	
kodu	*!							*			
pládzedu		*!			*						
☞pladzdu											
pladdu										*!	
pladu	*!							*			
djédzemu		*!			*						
☞djedzmu											
djemmu										*!	
djemu	*!							*			
kompetare		*!			*						
komptare							*!				
☞komtare								*			
(o)bískepu		*!			*						
(o)biskpu							*!				
☞ (o)bispu								*			
☞tséspide					*						
tsespte			*!	**			*				
tseste				*!				*			
sángine					*!						
sangne									*!		
sanne								*!	*		
☞sangre										*	
lɛbere		*!			*						
☞lɛbre						*					
komperare		*!			*						
☞komprare				*		*					
komrare	*!			*				*			
☞árbore					*						
arbre			*!	*		*					
arre	*!			*				*			

6.5.3. **Conclusions**

The case studies above demonstrate that a simultaneous account of syncope and phontactic change couched in the OT framework is problematic. Since OT is such a powerful theory, when the surface phonotactics between two historical stages remains constant, or appears to do so, it is often possible to devise rankings which achieve the desired outputs without any intermediate phonotactic change. Although it is not to say that is never the case, such analyses cannot be elaborated in a vacuum. Whenever two synchronic states are equated with the theoretical notions of input and output, it is necessary to test whether such an analysis maps with the historical facts. In historical Romance linguistics, although the data are often incomplete, before any theoretical study is undertaken, an accurate description of the linguistic facts must be given.

In this dissertation, painstaking effort was taken to collect as large a syncope corpus as possible. Close examination of these data has permitted not only the formulation of the phonotactic constraints which interacted with syncope in Hispano-Romance, but the evaluation of a theory of syncope and phonotactic change. Although this section has only sketched how the OT framework can be adequately employed to explain such changes, the testing of modern phonological theories in the historical domain is an area which deserves much more attention. Although this dissertation is most concerned with the effect of syncope on phonotactic change in Hispano-Romance, it is my hope that the recent interest in the study of syncope from an OT perspective (e.g. Gouskova 2003, Hartkemeyer 2000) stimulates further research in the study of syncope and similar vowel-loss phenomena from a theoretical perspective both synchronic and diachronic in nature.

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