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**Comparative Optimality-Theoretic Dialectology:
Singular/Plural Nasal Alternations in Galician, Mirandese
(Leonese) and Spanish**

**D. Eric Holt
University of South Carolina**

I. Introduction.

The data to be considered and analyzed in this paper concern the results of Latin *-n-*, e.g., the singular and plural reflexes of nouns ending in *-ŌNE*, *-ANU* and *-ANA*. Examples are given below:

1. a) Sp. *hermano/a(s)* (< Lat. GERMANU/A ‘brother/sister’),
pan ~ panes (< Lat. PANE ‘bread’)
razón ~ razones (< Lat. RATIOŅE ‘reason’)
- b) Ptg. *irmão(s), irmã(s); pão ~ pães; razão ~ razões*

The Spanish data, where no loss occurs, is straightforward and quite well understood. (See Moyna and Wiltshire 1999 for a recent optimality-theoretic (‘OT’) account of plurals in Spanish.) The Portuguese data have also been very much studied and heavily analyzed, though not without controversy, even after 30 years. (See Morales-Front and Holt 1997 for a review of previous approaches.)

Other closely related Ibero-Romance dialects show results different from those above, and these are the main focus of this paper. The main dialect group to be analyzed is that of Galician (see 2 below); at the end of this work I address further attention to Mirandese (see 3 below) and Spanish. Several observations follow each of the sets of data.

2. **Galician dialectal data:** (Primary focus of paper)
 (reflexes of Latin GERMANU, GERMANA ‘brother, sister’) (Perez, 209)

	<i>masc.</i>	<i>fem.</i>		
A:	<i>sg.</i> <i>irmão</i>	<i>irmã</i>	E:	<i>irmán</i> <i>irmán</i>
	<i>pl.</i> <i>irmaos</i>	<i>irmãs</i>		<i>irmáns</i> <i>irmáns</i>
B:	<i>irmao</i>	<i>irmá</i>	F:	<i>irmán</i> <i>irmán</i>
	<i>irmaos</i>	<i>irmás</i>		<i>irmás</i> <i>irmás</i>
C:	<i>irmao</i>	<i>irmán</i>	G:	<i>irmá</i> <i>irmá</i>
	<i>irmaos</i>	<i>irmáns</i>		<i>irmás</i> <i>irmás</i>
D:	<i>irmao</i>	<i>irmán</i>	H:	<i>irmán</i> <i>irmá</i>
	<i>irmaos</i>	<i>irmás</i>		<i>irmáns</i> <i>irmás</i>

Notes:

-n = [ŋ]; -ã = [ã̃]

See map at end of text for geographical distribution.

Solid boxes indicate loss of *-n* in plural.

Dotted boxes indicate identity of masc. and fem. forms. (**F** too.)

Observations:

- Plural always ends in /-s/.
- Masculine appears to be at least as complex as feminine forms (or more, perhaps arguably).
- Nasalization of vowels lost in all dialects except in **A**.
- Nasal “retained / recovered” in all fem. forms of **C**, **E**, and in fem. sg. forms of **D**, **F**; also retained in masc. forms of **E**, **H**; and in masc. sg. forms of **F**.
- **A** identical to Portuguese; arguably most conservative stage from which all others developed, either directly (**B**, **C**, **D**) or indirectly (**E**, **F**, **G**, **H**) according to Perez (1982).
- **E**, **F**, **G** show identical forms for masculine and feminine.
- Fem. forms of **D** and all forms of **F** show /-n/ only in singular (i.e., /n/ lost in plural).

3. **Mirandese data:** (Secondary focus of paper)
 (Leonese dialect spoken in Miranda, Portugal, on border with Spain; see map at end of text.)

<i>sg.</i>	<i>pl.</i>	<i>cf. Ptg.</i>	<i>gloss</i>
<i>pã</i>	<i>panes</i>	<i>pão, pães</i>	bread(s)
<i>biẽ</i>	<i>bienes</i>	<i>bem [bẽj] bens [bẽj⁽ⁿ⁾s]</i>	good(s)
<i>melõ</i>	<i>melones</i>		melon(s)
<i>coraçõ</i>	<i>coraçones</i>		heart(s)

	<i>fĩ</i>	<i>fines</i>	<i>fim, fins</i> : [fĩ, fĩ ⁽ⁿ⁾ s]	end(s)
	<i>èl tẽ</i>	<i>eilles tẽnan</i> (= [-ã#])	<i>ele tem, eles tẽm</i>	have, 3 sg., pl.
cf.	<i>mano</i>		<i>mão</i>	hand
	<i>cheno</i>		<i>cheio</i>	full

(Moraes Ferreira; Leite de Vasconcelos; Vásquez Cuesta and Mendes da Luz)

Observations:

- Mirandese forms intermediate between Galician **A** (and Portuguese), *irmão* ~ *irmãos*, and Spanish, *pan* ~ *panes*, displaying behavior of both: *pã* ~ *panes*. (Singular similar to Gal./Ptg., plural identical to Spanish.)
- Like Spanish, /-n-/ maintained.
- Plural always ends in /-es/.

II. Issues to be addressed in this paper.

Considering this preliminary observation of the data given above and upon further consideration below, a number of issues of theoretical import and interest arise and merit some attention. These may be divided into two groups, though the division is not always clear. These are outlined below:

4. Issues regarding the data at hand:

- a. How should the loss of Latin /-n-/ in Galician **A** (and Portuguese) be treated?
- b. What is the relation of the loss of Latin /-n-/ to Ibero-Romance lenition more generally?
- c. How should the loss of surface nasality in certain forms of Galician **B-H** be treated?
- d. How should the loss of Latin /-n/ in Mirandese, but its retention in plural (i.e., when syllable-initial), be treated?
- e. How should the formulation of NOCODA/Coda Condition/Coda Constraint for Galician be characterized (and for other languages/dialects too)?

5. Issues of more general theoretical interest:

- a. Role of underspecification.
- b. Role of articulator group (gesture) hypothesis of Padgett (among several others).
- c. Role of listener in reanalysis and back-formation (and decoding more broadly).
- d. Role of lexicon optimization.
- e. Role of dialect contact / mixture.

In the discussion that follows, each of these will receive some attention, though it must be considered preliminary at best, given the limitations of space.

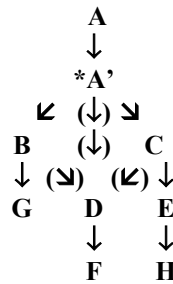
8. **Neutralization of gender to feminine in dialects E, F, G:**

- **E < C** (*irmán(s)* for masc. and fem. in **E**, only in fem. in **C**)
- **F < D** (*irmán ~ irmás* for masc. and fem. in **F**, only in fem. in **D**)
- **G < B** (*irmá(s)* for masc. and fem. in **G**, only in fem. in **B**)

For Perez, **H** (*irmán(s) ~ irmá(s)*) appears to be an innovative system based on **E** that now distinguishes masc. from fem.

The genetic relationship between the various dialect regions may be represented graphically as below:

9. **Perez' stemma:** (p. 213)



IV. Present Analysis.

IV.0. Introduction.

Perez' article presents a good description of the various evolutionary paths, but there is little theoretical analysis or support adduced to bolster his claims. This section aims to provide such underpinnings, and suggests that by making certain modifications we arrive at a better understanding of the evolution of the various forms and dialect patterns. Further, another *stemma* consistent with the revised argumentation is presented, suggesting that the role of dialect mixture and contact needs to be revisited, with results varying even within areas where the dialect mix was apparently uniform.

IV.1. First issue: How to treat the loss of Latin /-n-/, and its relation to lenition. (Issues (4a, b))

In the present work, the loss of /-n-/ is assumed to be a case of nucleation (in the sense of Colman 1983; see also Morales-Front and Holt 1997:413, 416 and *passim*), that is, as the incorporation of the nasal into the syllable nucleus, where it may not bear the feature [+consonantal], and is vocalized. The phonetic result is nasalization of the nuclear vowel.

Why should this occur? I follow some others who see it as part of the more general process of lenition that affected the consonant system of Late Latin. The

process of spirantization that affected the voiced simple consonants and yielded new /β, δ, γ/ from original /b d g/, also has an effect on /n/.¹ (See Martinet; also *Gran enciclopedia gallega*, 232)

However, as Padgett (1994, 1995) has argued extensively and, for me, convincingly, many languages show evidence for a marking condition against continuant nasals (*[cons, nas, cont]), and this conflict is resolved differently in different languages (e.g., via loss of the nasal, nasal gliding, intrusive stop formation, retention of marked segment, etc.)

The process of lenition appears to bring about such a feature combination in Galician-Portuguese, and the conflict is resolved by the vocalization of the nasal via its incorporation into the preceding syllable.² Articulatorily, we may understand this as the progressive assimilation of the nasal to the surrounding (oral) vowels; that is, there is a progressively weakened or vocalic pronunciation of the nasal.

/ (V) n /	LENITION (SPIRANT.)	MARKING CONDITION	MAX (SEGMENT)	IDENT
a. (V)] _σ n	*!			
b. (V)] _σ ø			*!	
c. (V)] _σ n [+ct]		*!		*
d. ³ (V) ~ [+ct]] _σ 7				*

Tableau 1

This is how and why nucleation occurs, as it is only this way that the salient characteristic of nasality may be retained, since the Marking Condition disfavors continuant consonantal nasals.

IV.2. Further issues: Role of underspecification and lexicon optimization. (Issues (5a,d))

Under the assumption that underlyingly intervocalic nasals will receive a [+cont] specification via lenition, the Marking Condition, apparently not violable in Galician-Portuguese, will always incur a penalty. To avoid this situation, as it is fully predictable, upon decoding, the listener will posit that the /n/ is underspecified for the feature [consonantal], as it is always effaced. That is, this fact is recorded in the lexicon and an archiphoneme /N/ is posited. This optimizes the grammar in that a predictable constraint violation is eliminated, increasing the harmony of the system. (See Inkelas 1994, and Girelli 1988 for a pre-OT view of similar facts from Portuguese. See also Morales-Front and Holt 1997:421. See the Appendix for prose statements of Inkelas' and Girelli's notions.)

Support that there is an underspecified /N/ comes from the phenomenon of anti-hiatic insertion in the history of Galician-Portuguese.⁴

10. **“Insertion” of nasal with a non-etymological point of articulation:**

VĪNUM ‘wine’ > *vi~o > Ptg. *vinho* ([ñ])

UNAM ‘one, fem.’ > *u~a > Ptg. *uma*, Gal. *unha* ([uŋa])

These data are most easily accounted for by assuming that the nasal is underspecified, rather than there being a change from /n/ → [ñ, m, ŋ]. (This could also be considered an example of Trigo’s “nasal excrescence”.)

The remainder of this section treats each of the three dialects assumed by Perez to have evolved directly from original A: **B**, **C** and **D**.

IV.3. Present Analysis II: Galician A-D.

I assume that original Gal./Ptg. forms /irmano(s)/, /irmana(s)/ surfaced as [irmãw̃(s)], [irmã(s)], which by reanalysis and lexicon optimization became /irmaNo(s)/, /irmaN(a)(s)/. This is schematized below:

11. **Stage 1: Galician-Portuguese (and Galician A):**

/irmano(s)/, /irmana(s)/ → [irmãw̃(s)], [irmã(s)]

→ /irmaNo(s)/, /irmaN(a)(s)/.

- By reanalysis and lexicon optimization, /-n-/ > /-N(-)/; morphological marker of fem. lost, as output [a~a] comes to be perceived as [ã]; stem then decoded as /irmaN/; in production, masc. form takes /o/, but no marker for fem.
- Constraint disfavoring nasal vowels, *V_[nas], low-ranked, dominated by lenition; nasal consonant lost. (See also note 3.)

Next, surface nasality weakens via gradual assimilation of position of the velum, and articulation is relaxed, with segment becoming fully oral between vowels. This is initially a phonetic process that leads to a phonological adjustment via constraint reranking and lexicon optimization. That is, when nasality is sufficiently weak from articulatory streamlining, hearers reanalyze constraint ranking, and promote *V_[nas] above MAX/IDENT_[nas], leading via lexicon optimization to /irmao(s)/, /irma(s)/. (Alternatively, new generation of speakers leaves these constraints in position of initial UG state, whereby the universal unmarkedness of oral vowels over nasal ones is expressed.) This is **B**:

12. **Dialect B (from A):**

/irmaNo(s)/, /irmaNa(s)/ → [irmãw̃(s)], [irmã(s)] (weak nasality in output; perceived as negligible; via abductive inference) → /irma+o(s)/, /irma(s)/.

/irma + o + s/ /irma + ø + s/	*V _[nas]	MAX
irmaw(s) 7		
irma(s) 7		

Tableau 2

- With lexicon optimization, there are now no constraint violations incurred.

Another possible reaction to the creation of nasal vowels is for the nasality to “fight back”. That is, the nasality may be “recovered” if MAX_[nas] dominates *V_[nas] (as suggested in note 3). Given that between vowels the nasality evidently came to be imperceptible, the masc. and fem. forms will be affected differently. (That is, it appears that the quality of the surrounding vowels was important here.) This appears to be the case of region C:

13. **Dialect C (from A):**

- masc. /irmaNo(s)/ → [irmãw̃(s)] (very weak nasalization between different vowels; perceived as negligible; via abduction) → /irma+o(s)/. (same as **B**)
- fem. /irmaN(a)(s)/ → [irmã(s)] (nasalization perceived more robustly when vowels identical) → /irmaN(s)/ (realized as [irman̩(s)], perhaps via default velar assignment to sonorant codas; see Trigo.)

/irma + o + s/ /irmaN + ø + s/	*V _[nas]	MAX
a. irmaw(s) 7		
b. irman̩(s) 7		
c. irmã(s)	*!	

Tableau 3

- This entails base allomorphy for the word ‘sibling’ (and all others of this sort): /irma/ for masc., /irman/ for fem.
- With lexicon optimization, there are still no constraint violations incurred. (Ranking of MAX and *V_[nas] is actually therefore indeterminate; Lenition/Spirantization must be inactive now as well.)

Dialect **D** behaves almost identically (masc. sg. and pl. and fem. sg. forms; same as **B**); however, the fem. pl. form [irman̩s] is not the outcome. Instead, the nasal is lost.

Why/How is [n̩s] avoided/changed? If there were assimilation of place of articulation, we might think that Padgett’s Marking Condition would militate against the sequence (also assuming Padgett’s and others’ articulator group

hypothesis, where [cont] appears below PA, and so assimilation of place entails assimilation of continuancy; see Appendix), but there is no PA assimilation (unless there is phonetic gestural overlap, perceived and reanalyzed by hearer); something else must rule out [ɲs].

Looking at Galician-Portuguese, we observe that as a general rule, only one consonant may appear in the coda (or that only one PA may appear).⁵ The Coda Condition for most dialects, then, bars [ɲs].

14. Dialect D:

- a. masc. /irmaNo(s)/ → [irmãw̃(s)] (very weak nasalization between different vowels; perceived as negligible; via abduction) → /irma+o(s)/. (same as **B**)
- b. fem. sg. /irmaN(a)/ → [irmã] → /irmaN/ (realized as [irman]). (same as **C**)
- c. fem. pl. /irmaN(a)s/ → [irmãs] → /irmaNs/ (potentially realized as *[irmanʃ], but disallowed) → [irmas]

/irma + o + s/ /irmaN + ø/ /irmaN + ø + s/	CODA CONDITION (*COMPLEX)	*V _[nas]	MAX
a. irma ⁷ w(s)			
b. irman ⁷			
c. irmã		*!	
d. irmaø			*!
e. irmanʃ	*!		
f. irmãs		*!	
g. irmaø ⁷			*

Tableau 4

- This too entails base allomorphy: /irma/ for masc., /irmaN/ for fem.

Under this view, dialect **C** (with fem. *irman(s)*, as well as masc. forms of **E** and all forms of **H**, discussed below) is slightly more permissive, with CODA CONDITION lower-ranked.

IV.4. Present Analysis III: Galician E-H.

For dialects **E**, **F** and **G**, the masculine forms are identical to the feminine ones (**E**: *irmán(s)*; **F**: *irmán ~ irmãs*; **G**: *irmá(s)*).

Dialect **E** parts from **C**, with which it is geographically contiguous: /irmaN/; from this surfaces fem. [irman] (no fem. marker). The question is how the masc. forms come to be identical. Is it, as Perez suggests, due to the analogical leveling of the paradigm, with the fem. forms displacing the masc.? Perhaps. However, there is an alternative explanation. (Or perhaps it is a way of explaining the implementation of the leveling.)

This is the following: just as the feminine no longer is marked overtly, it may be the case that speakers abandon the marker /-o/ for the masculine (for these words).⁶ (Articles and adjectives still show gender agreement.)

15. **Dialect E:**

Unique UR: /irmaN/; no (overt) marker added for either gender.
irmán ~ irmáns for both masc. and fem.

- Alternatively, the masc. forms are internalized as /irmaN/ from surface [irmãw̃] of **A**; in this case, nasalized [w̃] is misinterpreted as the realization of /N/, rather than of masc. /o/. (We will see in the analysis of **H** below that this alternative may be the preferable one.)

Dialect **F** is similar to **D**, with which it is contiguous. Here, either the masc. forms are replaced by the fem. (Perez), or alternatively, dialect **F** also descends directly from **A**, as described for **E**. However, the difference between **E** and **F** is the treatment of the plurals, which show loss of /n/, *irmás* (masc. and fem.), due to the more restrictive Coda Condition.

16. **Dialect F:**

Unique UR: /irmaN/; no (overt) marker added for either gender.
irmán ~ irmás for both masc. and fem.

/irmaN + ø/ /irmaN + ø + s/	CODA CONDITION (*COMPLEX)	*V _[nas]	MAX
a. irmaŋ 7			
b. irmã		*!	
c. irmaø			*!
d. irmaŋs	*!		
e. irmãs		*!	
f. irmaøs 7			*

Tableau 5

- (More restrictive Coda Condition rules out [ŋs].)

Dialect **G** is also similar to **B**, the largest region and that with which it is contiguous. Here, however, the UR is /irma/ and there is no (overt) marker of masc. or fem. Why isn't the UR /irmaN/? Because the nasal never surfaces, there is no evidence for its presence underlyingly, and this is lexicalized. How does this occur? This is a listener-based inference, and is really a case of analogical back-formation (= issue (5c)). That is, the original UR /N/ is eliminated by the hearer-speaker in order for the pair of surface forms to have

the same representation, rather than there being stem allomorphy (/irmaN/ for masc., /irma/ for fem.)⁷ There are similar cases of non-etymological singular and plural forms based on reinterpretation by the hearer in the evolution of Latin:

- 17. Examples of non-etymological sg. and pl. forms due to reinterpretation:**
 TEMPUS ‘time’ (sg.) > *tiempos* (sg.; later reanalyzed as plural when /-s/ identified with plurality) > *tiempo* (original form looked plural, so /-s/ eliminated.)
 FOLIA ‘leaves’ (pl.) > *hoja* (lacked /-s/, so reanalyzed as singular) > *hojas* (/ -s/ now needs to be added to mark plurality.)
 OPERA ‘works’ (pl. of OPUS) > *obra* (reanalyzed as singular, so /-s/ now needs to be added to mark plurality.)

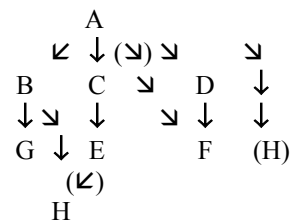
18. Dialect G:

- URs: /irma/ back-formed from /irmaN/, since nasal never surfaced;
 • no (overt) marker added for either gender.⁸
irmá ~ *irmás* for both masc. and fem. (e.g., now means ‘sibling’)
 (Again, articles and adjectives still show gender agreement.)

Finally, dialect **H** is also like **B**, with which it is in contact. This may explain why the feminine forms coincide, as both may have reacted similarly to those forms of **A**. The masculine forms, however, are similar to those of **E**. One possible explanation is that region **E** originally covered a larger territory, and that there was dialect mixing with speakers of **E** (= issue (5e)). A restructuring would then have taken place that changed the **B** speakers’ UR /irma/ to **E**’s /irmaN/. However, this must have led to allomorphy, as the fem. forms *irmá(s)* are not easily related to /irmaN/. (The proximity with Portuguese may also be a factor; loss of nasality (via new dominance of *V_[nas]); with reinterpretation of [irmãw̃], as perhaps in dialect **E**, as /irmaN/. I leave this matter open.

The picture that emerges is the following:

19. Alternative stemma:



V. Present Analysis: Mirandese and Spanish.

Returning to the data in (3) (e.g., *pã* ~ *panes*), we see that it presents a position intermediate between Spanish (*pan* ~ *panes*) and Galician-Portuguese (and Galician **A**; *pã* ~ *pães*). Like in Galician-Portuguese, it appears that final

/-n/ was under pressure to become [+cont] via Lenition, but that the Marking Condition disfavored that solution, with nasalization of the preceding vowel resulting instead. However, when /n/ is intervocalic, it may surface as a coronal consonant. Mirandese, too, then appears to derive from Galician A.

20. **Mirandese:**

/pan/ → [pã] /pan + s/ → [panes]	LENITION	MARKING CONDITION, CODACOND	IDENT	DEP
a. pan	*!	*!		
b. pan (n = [+ct])		*!, *!		
c. pa~ [=ã] 7			*	
d. pans	*!	*!		
e. pans (n = [+ct])		*!, *!		
f. pa~s			*!	
g. panes 7				*

Tableau 6

- Even if LENITION is inactive in the modern dialect, the same results obtain.

Spanish, on the other hand, doesn't lose /n/ (or /l/). The process of lenition (at least spirantization) appears to have only affected segments of lower sonority. Given that Sp. /n/ is coronal, not velar, the combination [ns] should result. However, this is impermissible, apparently because there would be assimilation, and according to the articulator group hypothesis this would entail a violation of the Marking Condition. To avoid this, an epenthetic [e] surfaces:

21. **Spanish:**

/pan/ → [pan] /pan + s/ → [panes]	MARKING CONDITION, CODACOND	MAX	DEP
a. pan 7			
b. paø		*!	
c. pans (n = [+ct])	*!, *!		
d. paø		*!	
e. panes 7			*

Tableau 7

- Epenthesis avoids violating Marking Condition; DEP lower ranked; LENITION inactive.

VI. Summary.

In the present paper I have aimed to treat the numerous results that derived from Latin /n/ and to show that reanalysis of the Galician dialect variation of singular/plural alternations is possible. The present argumentation supports some of the claims made by Perez, but allows us to view some of the same facts differently, and I suggest in a more principled fashion. Further, this argumentation extended, with slight modification, to account for Mirandese and Spanish alternations, which had not been done before, to the best of my knowledge.

To conclude, such complex Romance data of this sort have not been treated in OT before,⁹ and the analysis given here shows how minimal reranking (that is, differing importance) of a small number of constraints (on vowel nasalization, coda conditions and the Marking Condition) and reanalysis by the hearer-speaker of surface phonetics and patterns (via lexicon optimization and analogical leveling and back-formation) accounts for both historical change and present dialectal variation. This paper thus provides a theoretical implementation of the phenomenon that underlies the geographic distribution of singular/plural nasal alternations across the dialect continuum that extends along northwestern Spain.¹⁰

Appendix

Notions appealed to in the text:

- **“Lenition”**. (e.g., Martinet; *Gran enciclopedia gallega*)
/-n-/ (and /-l-/) effaced in Galician-Portuguese as part of more general process that also effected the spirantization of /b d g/ (> /β δ γ/; further, /δ γ/ frequently lost.)

This, it is argued, occurs via the spreading of [+cont] of the preceding vowel; because of Marking Condition, nasal feature incorporated into preceding nucleus.

- **Marking Condition for nasals:** (Padgett 1994, 1995)¹¹
*[Cons, nas, +cont] “Continuant nasal consonants are marked.”
(Leads to vowel nasalization or epenthesis.)
- *V_[nas] “No nasal vowels; Nasal vowels are disfavored.”
(Yip 1994, Morales-Front and Holt 1997, *inter alia*.)

- **The articulator group hypothesis:**
(Padgett; Selkirk; Browman and Goldstein)
[Cons] (Assimilation of Place entails assimilation of continuancy,
| but not vice versa.)
[PA] (This will entail that Spanish and Mirandese PA assimilation
| will fail in /ns/ plurals, and epenthesis will result.)
[cont]
- **Lexicon optimization** (Inkelas 1995; Prince and Smolensky 1993:192)
“[O]f all the possible underlying representations that could generate the attested phonetic form of a given morpheme, that particular underlying representation is chosen whose mapping to phonetic form incurs the fewest violations of highly ranked grammatical constraints.”
- **Neutral Ground Hypothesis** (Girelli 1988:116)
When a segment alternates for some features in different contexts, in the lexicon it is specified, with unmarked values for the features for which it alternates.
- **Coda Condition for Galician-Portuguese, Modern Spanish and Portuguese, Galician A, B, D, F, G:**
*Coda (In Modern Spanish, /ns, rs, ls/ appear, but infrequently.)
/ \

(May also be formulated in terms of *COMPLEX CODA, NOCODA, *STRUCTURE, or some other such constraint that favors more minimal associations. See also Colina 1995, 1997.¹²)

Notes

* I'd like to thank the participants of the symposium for their comments, questions and feedback, an anonymous reviewer for helpful suggestions for improvements to this work, and Mabel Brage for consultation on the Galician data. The usual disclaimers apply.

1. This may be viewed as a the spreading of the feature [+continuant] from the preceding vowel, i.e., in OT, as the re-ranking of SPREAD[+cont] >> IDENT[cont]). /r/ was probably already continuant; also affected was /l/, not discussed here. (See Holt 2000, though, for support for the claim that /l/ is [-cont] at its primary PA, but [+cont] at its secondary PA, and Kaisse 1998 for evidence from a range of languages that laterals are [-cont]. If this assumption is correct, /l/ (and /n/) patterns here with the obstruents in undergoing lenition because these are all [-cont] at their primary constriction.)

2. Spanish forbids this combination of features; that is, the Marking Condition is dominant. Intervocalic /-n-/ is thus maintained.

3. This is perceived by the listener as [v̄]. By making this assumption, I may adhere to the posited unmarked ranking (i.e., initial-state of UG) of *V_[nas] >> MAX/IDENT, which reflects (only partially, perhaps) the fact that oral vowels are preferred to nasal ones, or at least that segments aren't easily lost to create them.

Though not explicitly justified in the text, I assume that the Marking Condition dominates MAX, as I am assuming that *V_[nas] dominates it too. Under these assumptions, an output candidate [v̄] is actually suboptimal phonologically, but optimal [v~] is perceived as phonetically identical.

However, speakers' own production grammars will not yield [v̄], and this may trigger a reranking of MAX/IDENT >> *V_[nas], which would then allow them to produce [v̄]. This would be a case of abductive/deductive change, à la Andersen 1973. I leave fuller exploration of this issue to future research.

4. See Holt 1993, where these, and similar processes in Spanish, French and Italian not involving nasals, are treated as cases of featural spreading from the preceding vowel.

5. This is also true of both Modern Spanish and Portuguese; see appendix on Portuguese syllable structure in Morales-Front and Holt 1997: 426-428. See also Colina 1995, 1997, where CODA-COND ('only coronal PA is allowed in coda') and *COMPLEX CODA ('only one C may associate to coda') are invoked.

6. See Kuryłowicz 1949, Vincent 1974 and Małczak 1980 for arguments and evidence that more basic categories/forms are typically shorter than marked ones. This suggests that if more marked forms are shorter than less marked ones, language users may favor making an adjustment. It has been argued that the unmarked gender of Spanish is the masculine, as evidenced, e.g., by its use in all epicene contexts, and which probably ought to be considered 'non-feminine'. (See Whitley 1986: 149.) Here, this suggests that language users in this case drop masc. /-o/ and thus fall into alignment with this robust cross-linguistic tendency.

7. Further, as discussed in note 6, masculine is taken to be more basic, and for reasons of iconicity might be expected to be shorter than the more marked feminine forms.

8. Alternatively, perhaps it is the case that speakers come to analyze the [-ŋ] as the marker of masc. This would still mean that the masc. was longer than the feminine, though. I reject this approach.

9. See Gross 1997 for an OT treatment of dialectal data from Gbe.

10. The reviewer wonders to what extent regional orthographies might influence the creation and maintenance of distinct base forms across dialects in the region. I am unfamiliar with any local variation in the writing systems, and Perez makes no mention of them in his article, so I leave this question open.

11. The reviewer asks if such a Marking Condition might be extended to other obstruent classes, particularly given my reliance on Lenition as underlying the

loss of the nasals. I leave this interesting question open, but do note that fricative [ɣ] was frequently lost in Late Latin/Old Spanish (e.g., RĒGĪNA ‘queen’ > *re[ɣ]ina* > *reina*), as was [ð], though less frequently (e.g., CRŪDU ‘raw’ > OSp. *crúo*, recovered in MSp. *crudo*).

12. The reviewer notes that coda position in Spanish is relatively weak even for single segments, not just bisegmental ones, as evidenced by the weakening of /b, d, g/ in words such as *clu(b)*, *uste(d)*, *di(g)nida(d)*, and by their epenthesis in the plural. Properly formulated, therefore, NOCODA would help to capture these facts, as well as the fact that /s/ is the only segment tolerated in coda-second position, perhaps as a result of the universally noted characteristic of /s/ to pattern at the margins of syllable structure.

Maps

Dialect geography in Galicia (Perez 1982)

Miranda do Douro (Herculano de Carvalho 1952)

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