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## SOMMAIRE

# THE EMERGENCE OF STRUCTURE IN INFLECTION: PERFECT ROOTS IN IRREGULAR GALICIAN VERBS[1]

**Abstract**

Maiden (2001) identified the properties of *coherence* and *convergence* in the perfect stems of Galician, Portuguese and Spanish irregular verbs. Coherence is responsible for analogical levelling. Convergence is responsible for the tendency shown by the irregular perfect roots of different lexemes to share morphological similarities. In this paper, I will show that the form of irregular roots, and the properties of convergence and coherence, would be fanciful without the notions of *lexical connection*, *lexical strength*, *relevance*, or *type* and *token frequency*, proposed by the Exemplar Model of morphology. The changes undergone by roots also show how morphological structure is a property emerging from storage.

**Key words**

Galician, Exemplar Morphology, verbal inflection

## 1. Introduction

Galician is a language made up of Romance dialects that evolved in the northwest of the Iberian Peninsula. In Hispanic linguistics the northern dialects are known as *dialectos constitutivos* because they have developed *in situ* since Romanization began. Early varieties of these dialects that were carried southward during the historical process known as the Reconquista (between the 8th century and 15th century) gave rise to varieties known as *dialectos consecutivos*: this is the point of origin for central Castilian, Andalusian Spanish, Portuguese and southern varieties of Catalan. The northern dialects, which descend directly from Latin, contain greater variation than the southern ones since the latter have undergone more dialect levelling.

Northern variation displays the potential for linguistic change since it is possible to observe how an item (e.g. Lat. CANTĀTE, 2PL.IMP of CANTĀRE 'to sing') gave rise through phonological and morphological changes to several forms (Gal. *cantade, cantande, cantai, cantá*). Variation also allows us to test the explanatory power of linguistic theories. My goal in this paper is to

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explore how changes in irregular perfect roots[2] in Galician support *Exemplar Morphology* and its view of grammar as structure emerging from the storage of linguistic items.

By *perfect roots* I mean the Galician root forms seen in the Past Perfect Indicative, the Pluperfect Indicative and the Past Subjunctive, which share a set of special irregularities. Maiden (2001) calls these tenses PYTA (a Spanish acronym for *Perfecto y Tiempos Afines*), while in the Latin tradition maintained in grammars in Romance languages these tenses make up the *perfectum*, as opposed to the *infectum*, which groups together the remaining tenses, formed from verbs' *present roots*.

In this paper I will analyse formal changes that were either generated in the course of the historical development of Galician or else are the product of ongoing variation. Sometimes variants compete with each other within a dialect (*fixemos* vs. *figuemos* 'we made'); other times, older forms make a come-back and prevail over innovations (*puxemos* vs. *puñemos* 'we put'). It is beyond our scope to consider each and every variant in sociolinguistic or geolinguistic detail: while I will focus on formal analysis, it should not be forgotten that the language's formal elements are one thing, but their historical fortune another.

In §2 I will set out the Galician data and their problems. In §3 I will discuss the basic theoretical tools of the Exemplar Model developed by J. Bybee and use them to explain the Galician data. I will present some conclusions in §4.

## 2. Verbs with irregular perfect stems

Eighteen Galician verbs, together with their derivatives, have perfect stems which present certain irregularities, namely *dar, ver, dicir, facer, querer, traer, caber, haber, saber, pracer, poder, ter, estar, ser, ir, poñer*/*pór* and *vir*. A subset of these, the fourteen verbs listed in (1), are among the twenty most frequently used verbs in the Galician language (Bugarín 2007)[3]:

1. *ser* 'to be' (copula) 1.9444% [of the tokens in Bugarín's corpus]
   *ter* 'to have' 0.9011%[4]
   *ir* 'to go' > 0.6348%
   *haber* 'to be, exist etc.' (etymologically 'to have') > 0.5841%
   *estar* 'to be' > 0.5635%

2. I will use *stem*, *root*, (*word*) *form*, *morphosyntactic word, morphosyntactic representation*, and *lexeme* strictly in the sense of Matthews (1991).

3. Bugarín's (2007) corpus contains 2,064,874 tokens obtained from written and oral sources. Unfortunately, because of the way it was conceived, it does not represent the language used by speakers in natural interactions. Due to how entries are organised, it is also not always possible to identify the morphosyntactic representation of the forms presented. Thus figures given from this source should be treated with caution as a rough approximation.

4. Figures include the verbs indicated and others derived from them.

*facer* 'to make, to do' > 0.5484%
*dicir* 'to say' > 0.54%
*poder* 'to be able, can, may' > 0.3651%
*dar* 'to give' > 0.3236%
*vir* 'to come' > 0.2692%
*saber* 'to know, to taste' > 0.2528%
*ver* 'to see' > 0.2519%
*poñer ~ pór* 'to put' > 0.2253%
*querer* 'to want' > 0.2041%

In this paper, I shall ignore *ser*, *ir*, *ver*, and *dar*, since their perfect stems behave differently from the others in (1) (Álvarez & Xove 2002), but shall include *traer* 'to bring' (0.0536%). Thus I will focus on *dicir, facer, querer, traer, caber* 'to fit'*, saber, poder, ter, estar, poñer*, and *vir* and their derivatives; for most dialects it is necessary to add *andar* 'to walk' (0.1082%), which sometimes has an irregular root [andib] ~ [andub].

### 2.1. *General properties of the irregular Galician perfect stems*

Compare the conjugation of regular *bater* 'to beat' and irregular *querer* 'to want' in (2), where the forms under the column IND.PRS show the present stem and the forms under IND.PST.PRF represent the perfect stem:

2.

| | irregular: *querer* | | | regular: *bater* | |
|---|---|---|---|---|---|
| | IND.PRS | IND.PST.PRF | IND.PRS | IND.PST.PRF | |
| 1SG | 'kɛɾ-o | | 'kiʃ-e-ŋ | 'bat-o | bat-'i-ŋ |
| 2SG | 'kɛɾ-e-s | | kiʃ-'ɛ-tʃes | 'bat-e-s | bat-'i-tʃes |
| 3SG | 'kɛɾ-e | | 'kiʃ-o | 'bat-e | bat-'e-w |
| 1PL | keɾ-'e-mos | | kiʃ-'ɛ-mos | bat-'e-mos | bat-'e-mos |
| 2PL | keɾ-'e-des | | kiʃ-'ɛ-stes | bat-'e-des | bat-'e-stes |
| 3PL | 'kɛɾ-e-ŋ | | kiʃ-'ɛ-ɾoŋ | 'bat-e-ŋ | bat-'e-ɾoŋ |

Note that the irregular perfect stems display a special stress pattern in the 1SG/3SG.IND.PST.PRF: in these forms the root is stressed: *quíx-en, quíx-o*. In the regular perfect, the root is unstressed throughout: *bat-ín, bat-éu*.

In the irregular forms, the 3SG.IND.PST.PRF ends in [o], which Santamarina (1974) and Álvarez & Xove (2002) treat as an allomorph of the person-number suffix (PN) in complementary distribution with regular [w]. The allomorph [o] appears as a syllabic nucleus immediately following a stressed root ending in a consonant: *quíx-o*; [w] (spelt <u>), on the other hand, follows regular stems ending in a vowel: *cant-ó]-u, com-é]-u, part-í]-u*. The vowel preceding [w] is the thematic vowel (TV). (A reference list of abbreviations used in this paper precedes the bibliography.)

The irregular forms of the 1SG.IND.PST.PRF have the vowel [e] after the stressed root: *quíx-e-n*. Except for the 3SG.IND.PST.PRF, in all other forms of the perfect group of tenses the root is unstressed and followed by [ɛ] which

appears both in stressed (e.g. *quix-é-mos*) and unstressed pretonic syllables (e.g. *quix-e-rá-mos*). Both [e] and [ɛ] are considered allomorphs of the TV (Santamarina 1974, Álvarez & Xove 2002, Fernández Rei 1998) which appears no matter what conjugation the verb is assigned to in the present tenses: thus *estar* belongs to the 1st conjugation in the present, *saber* to the 2nd and *dicir* to the 3rd, yet all three take [e] and [ɛ] as their VT in the perfect.

One last point that should be noted at this stage is that these irregular-perfect verbs have different roots in the present and the perfect stems. Their perfect stems in standard Galician are illustrated in (3):

| 3. | *Present* | *Perfect* |
|---|---|---|
| | 1PL.IND.PRS | 1PL.IND.PST.PRF |
| *dicir* | [di'θi-mos] | [di'ʃɛ-mos] |
| *facer* | [fa'θe-mos] | [fi'ʃɛ-mos] |
| *querer* | [ke'ɾe-mos] | [ki'ʃɛ-mos] |
| *pór*/*poñer* | ['po-mos/po'ɲe-mos] | [pu'ʃɛ-mos] |
| *traer* | [tɾa'e-mos] | [tɾow'ʃɛ-mos] |
| *estar* | [es'ta-mos] | [esti'bɛ-mos] |
| *caber* | [ka'be-mos] | [kow'bɛ-mos] |
| *haber* | [a'be-mos] | [ow'bɛ-mos] |
| *saber* | [sa'be-mos] | [sow'bɛ-mos] |
| *pracer* | [pɾa'θe-mos] | [pɾow'gɛ-mos][5] |
| *poder* | [po'de-mos] | [puj'dɛ-mos] |
| *ter* | ['te-mos] | [ti'bɛ-mos] |
| *vir* | ['bi-mos] | [bi'ɲɛ-mos] |

The rest of the exponents of the irregular forms are fully predictable, identical to those of the regular forms.

To sum up, irregular perfect forms in Galician show specific exponents that are in some way *identifiable, predictable* and *paradigmatic*. The place of stress in the 1SG/3SG.IND.PST.PRF, the PN [o] in the 3SG.IND.PST.PRF, and the TVs [ɛ] ~ [e] are all identifiable elements that constitute the paradigm of this set of verbs.

### 2.2. *Perfect roots*

Maiden (2001) states that the distribution and form of irregular perfect roots are not fully predictable from phonological features, morphosyntactic

5. *Pracer* 'to please', a less frequent irregular verb. In western dialects there is no /g/ phoneme, which in the standard variety and eastern dialects represents the allophones [g] and [ɰ] in complementary distribution (Álvarez and Xove 2002, p. 40); the lexical place of /g/ is occupied by /h/: eastern /fago/, 1SG.IND.PRS of *facer*, western /faho/. Hence wherever the reader finds /g/ we should understand that this consonant's place may be occupied by /h/ and vice versa. The phenomenon of using [h] is known as *gheada* in Galician grammars (Fernández Rei 1990, p. 163-188).

properties or semantic values. Perfect roots appear in the IND.PST.PRF (e.g. *quix-en*), the IND.PST.PPRF (*quix-era*) and the SBJV.PST (*quix-ese*). Although the property PST appears in all the morphosyntactic representations, its presence is not a sufficient condition: the Imperfect Indicative also has PST in its morphosyntactic representation (IND.PST.IPRF) but takes the present root: *quer-ía*.[6]

The semantic feature 'perfective' is not responsible for the selection of the irregular root: as (4) shows, SBJV.PST may lack this feature:

4. *se mañá o fixese, sabíao* 'If he did it tomorrow, I would know (it)'
   *se agora o fixese, sabíao* 'If he did it today, I would know (it)'

Neither is the semantic feature 'past' sufficient: the Conditional forms in (5) indicate a future event within the past and they use present roots:

5. *Anos despois habería cartos suficientes* 'Some years later, there would have been money enough'
   *Onte viría se o deixasen* "He would have come yesterday, if they had let him"

The Portuguese Future Subjunctive (which has fallen into disuse in Galician) does not refer to the past either, and uses irregular perfect roots: *Se o fizeres bem, não terás de arrepender-te* 'If you do it right, you will not have to be sorry'.

Irregular roots have *family resemblances*: they share similarities, although there is no single feature common to all the forms.[7] Galician grammarians have always been aware of this (Álvarez and Xove 2002, p. 255; Álvarez, Regueira, and Monteagudo 1986, p. 318). Thus in the stems in (3) the last vowel of the verb's root (the *root vowel*, RV) is high: *pór*/*poñer*, [puʃ]; *querer*, [kiʃ]; *vir*, [biɲ]. Diphthongs may also appear: [ow] in [owb], [sowb], [trowʃ], and [uj] in *poder* [pujd]. In the dialects other combinations occur: e.g. *traer* may have the perfect root forms [trowʃ] ~ [truʃ] ~ [trojʃ]; *saber*, [sowp] ~ [sup]; *haber*, [owb] ~ [ub]; *poder*, [pud] ~ [pujd] ~ [pojd].

In some verbs, the last consonant of the root (the *root consonant*, RC) is often a postalveolar fricative: *pór*/*poñer* [puʃ], *traer* [trowʃ], but we can also find [ɲ] (*viñ-emos*), [b] (*soub-emos*). In the dialects, the perfect root of *traer* may be [trowg] ~ [trowʃ] ~ [tru]; *pór*/*poñer*, [puʃ] ~ [puɲ]; *saber*, [sowp] ~ [sowb]. The forms listed in (6) exemplify these family resemblances:

6. The Imperfect Indicative may be interpreted either as a past imperfective or as a present in the past. In any case it is a form used to express the past.

7. Ladefoged and Maddieson apply the notion of *family resemblances* to rhotics: "Each member of the rhotic class resembles some other member with respect to some property, but it is not the same property that constitutes the resemblance for all members of the class" (1996, p. 245).

6. *pór*/*poñer :* [puʃ], [puɲ]
   *traer :* [trowʃ], [truʃ], [truj], [tru], [trojʃ], [trowg], [trojg]
   *saber :* [sowp], [sowb], [sup]
   *estar :* [estub], [estib]
   etc.

These facts led Maiden (2001) to detect two properties of irregular perfect roots. The first of these he calls *coherence*:

> 'Coherence' means that the mutually implicational relationship between preterites and non-present subjunctives has stood indissoluble throughout history. […] Nothing has sundered the root of the preterite from that of the non-present subjunctives. Any analogical change affecting a PYTA [i.e. perfect] root affects that root throughout the paradigm of the relevant verb. […] Replacement of the PYTA root by its non-PYTA counterpart never creates 'mixed' systems (Maiden 2001, p. 444)

*Coherence* explains the relationship among the perfect roots within each lexeme: every perfect stem of a lexeme shares one root throughout its history; and if a phonological change produces a different root in one element of the paradigm, the other roots may be reconstructed by analogy. For example, in the roots *pór*/*poñer* in (7) we see phonological changes in the form corresponding to 1SG.IND.PST.PRF that ended up being transmitted to the whole class:

| 7. | Latin | Proto-Romance | Old Galician | Modern Galician |
|---|---|---|---|---|
| | PŎSU-Ī | *[poʒ̺]-i | [puʒ]-i[8] | [puʃ]-en |
| | PŎSU-ISTĪ | *[poʒ̺]-esti | [poʒ̺]-este | [puʃ]-eches |
| | PŎSU-IT | *[poʂ̺] | [poʂ̺] | [puʃ]-o |
| | PŎSU-imus | *[poʒ̺]-emos | [poʒ̺]-emos | [puʃ]-emos |

The final [i] in the 1SG.IND.PST.PRF *['poʒ̺i] in Proto-Romance raised the RV from [o] to [u], giving ['puʒ̺i];[9] next, the RC, an apico-alveolar fricative [ʒ̺], is palatalized by the final [i], giving ['puʒi] in Old Galician; the new root [puʒ] spread by paradigmatic levelling to all the perfect tenses and forms of *pór*/*poñer*; while a late (or simultaneous) devoicing of the coronal fricatives created the [puʃ] of Modern Galician: *pux-en, pux-eches, pux-o* (Santamarina 1974, p. 45).

8. Martínez Mosquera (2000/2001, p. 109) finds the following roots for the 1SG.IND.PST.PRF in old Galician: [poʒ], [puʒ], [puʃ], [poʂ] and [puʂ], sometimes followed by [e] as TV and sometimes by [i]. See Varela (1999) for a chronology.

9. PŎSUĪ had a stressed ŏ, [ɔ] in Proto-Romance (Santamarina 1974 suggests PŌSUĪ as the etymon). Penny (2002, p. 226) and Ferreiro (1995 p. 37 and 333) speak of a first harmony caused by the U and a second one by the Ī. Williams (1938, p. 236) speaks of the reduction of [ɔw] in Vulgar Latin, with subsequent raising of [o] by umlaut: *[pɔʒ̺wi] > *[pɔwʒ̺i] > [poʒ̺i] > [puʒ̺i].

The second property Maiden describes is *convergence*:

> 'Convergence' means that PYTA forms assume a common phonological shape, resembling each other more and more, and the individual lexical verb to which each root belongs, less and less. Moreover, convergence is peculiar to PYTA, in that the relevant verbs show no sign of convergence in any tense-forms outside PYTA. (Maiden 2001, p. 447).

This property, which establishes formal links among the irregular forms of the different lexemes, is related to family resemblances. Xavier Varela (1999), using the term *paradigmatic solidarities*, studies this phenomenon in the *sigmatic verbs* (those which present schemata close to that of 7). Convergence explains why the perfect roots of different lexemes tend to be more similar to each other, and less similar to the present root forms of their lexemes.

Thus, the Romance outcome of Latin FĒCĪ was ['fizi], with a lamino-alveolar [z] (Varela 1999, p. 1051); in some dialects, the RC [z] regularly evolved to [θ], giving rise to [fiθ] in the perfect. However, in other dialects, the perfect stem of old *fazer* developed a root that ended in a postalveolar fricative, [fiʃ] (Santamarina 1974, p. 42 and Varela 1999, p. 1053). This change is attributable to *convergence* : the perfect root of old *fazer* (present-day *facer*) changed by analogy with the verbal forms that spontaneously developed a postalveolar fricative: ['fizi] > ['fiʒi], like ['puʒi], ['diʃi].[10] The new root [fiʒ] *converges* with the perfect roots of *querer* [kiʒ], *pór*/*poñer* [puʒ], with postalveolar RC, and *diverges* from the present root of *fazer*, with lamino-alveolar RC : *faço, fazer, fazía*.

The perfect root of *traer* also illustrates convergence. The root in Standard Galician is [trowʃ]; in the dialects, we find [trowg] (compare the maps 381, 382 and 386 in *ALGa I*). However, there also exist variants that alternate different RVs, recombined with other RCs: [trowʃ], [trowg], [trojʃ], [trojg], [truʃ], [trug]… These variants of RVs occur because dialects take different elements of the formal possibilities detected in the perfect roots, which constitute the elements of the family resemblances. These formal elements move the perfect root forms of *traer* away from their present root forms, showing the power of convergence.

### 2.3. *Stubborn and unruly forms*

Although Maiden (2001) correctly attributes the properties of coherence and convergence to the irregular roots, these only represent two general tendencies, whose explanatory power may be limited if there are exceptional, but systematic, word forms that fail to obey them.

*Stubborn forms*. Some dialects present roots resisting the coherence principle in the 3SG.IND.PST.PRF. In Portuguese, more conservative than Galician

10. The forms of old *fazer* had a fricative lamino-alveolar RC (not an apico-alevolar one; Varela 1999); lamino-alveolar fricatives were not affected by palatalization.

in this respect, *fazer* has *fez* 'he did' in 3SG.IND.PST.PRF, as against *fiz-* elsewhere in the perfect tenses (thus *eu fiz, nós fizemos* etc.); *pôr* presents *pôs* contrasting with *pus-* (*eu pus, nós pusemos*), *ter* presents *tev-* (*ele teve*) but elsewhere *tiv-* (*eu tive, nós tivemos*)…

Most Galician dialects have gone beyond Portuguese dialects in restoring coherence, having eliminated more of the *stubborn* forms, though stopping short of Spanish dialects in this respect. So, levelling processes like that of (7) affected almost all the verbs in (3), with the exception of *vir*. Nowadays we only encounter stubborn forms corresponding to the 3SG.IND.PST.PRF in some peripheral dialects: in the conjugation of *facer* we find *fex-o* or *fez-o* in the east, as against *fix-o* or *fiz-o* elsewhere (see Map 261 in *ALGa I*); in *pór*/*poñer*, we find *pos-o* or *pox-o* in the east and some points in the south, but *pux-o* elsewhere (see Map 325 in *ALGa I*).

*Vir* also has stubborn forms, as shown by Paradigm A of its perfect tenses in (8). In Galician, no dialect presents a coherent paradigm of the kind *viñen, viñeches, **viño, viñemos*, etc.: the forms corresponding to the 3SG.IND.PST.PRF are ['bew], ['bɛw], ['bɛŋ], or ['biw]. In the 1SG.IND.PST.PRF, a form without TV, ['biŋ] < VĒNĪ (spelt *vin*) dominates; this ['biŋ] only partially resembles the root [biɲ] of the unstressed forms; together with ['biŋ] we find 1SG ['biɲ-eŋ], which brings back partial coherence and convergence by using the root [biɲ]-, the TV [e], and the PN [ŋ], as shown by Paradigm B of *vir* in (8). There exists a third way to conjugate *vir*, Paradigm C in (8), in Asturias and in the North of León, where 1SG.IND.PST.PRF has a discordant root, ['biŋ], as against [bɛ]- elsewhere in the perfect paradigm. This gives three different developments:

| 8. | Paradigm A | Paradigm B | Paradigm C |
|---|---|---|---|
| 1SG.IND.PST.PRF | ['biŋ] | ['biɲeŋ] | ['biŋ] |
| 2SG.IND.PST.PRF | [bi'ɲɛtʃes] | [bi'ɲɛtʃes] | ['bɛtʃes] |
| 3SG.IND.PST.PRF | ['bɛw]~['bew] | ['bɛw]~['bew] | ['bɛw]~['bew][11] |
| 1SG.IND.PST.PPRF | [bi'ɲɛra] | [bi'ɲɛra] | ['bɛra] |

*Unruly forms*. There is an old tendency in Galician, Portuguese and Spanish to regularize old irregular perfect roots forms in some verbs: *valer* 'to cost, be worth' had the irregular perfect root *valv-*, while *doer* 'to hurt, be painful' had *dolv-*. Today, these lower-frequency irregular verbs have regularized their conjugation by extending the present roots to the perfect:

- *joug-o* ~ *jouv-o* (from *jaz-er* 'to lie') > *xac-eu*;
- *pris-o* (from *prend-er* 'to catch') > *prend-eu*, etc.

These changes represent a minor move against convergence, since the irregular perfect root is abandoned and regular forms characteristic of the present are adopted throughout.

11. The alternation [ɛw] ~ [ew] is phonological and produced by a tendency to the neutralisation of mid vowels followed by a semivowel in the same syllable.

However, we also find changes that defy convergence more boldly: hybrid forms that combine perfect and present root features. In (9) we see the conjugation of *facer* in four dialects (Maps 259, 260, and 261 in *ALGa I*):

| 9. Central-Western | Eastern | Southern | A.5 |
|---|---|---|---|
| [fiʃ]-en | [fiθ]-en | [fih]-en | [fiʃ]-en |
| [fiʃ]-eches | [fiθ]-eches | [fih]-eches | [faθ]-iche |
| [fiʃ]-o | [fiθ]-o | [fih]-o | [feʃ]-o |
| [fiʃ]-emos | [fiθ]-emos | [fih]-emos | [faθ]-emos |

The perfect root of *facer* in Central-Western Galician presents a RC [ʃ] and a RV [i] that brings [fiʃ] closer to [diʃ], [kiʃ], [puʃ]. Eastern Galician maintains conservative forms, without palatalization of the RC, but with a high RV [i]; apparently, [fiθ] does not defy convergence, although this /θ/ is unique among the RCs of perfect roots (in fact, the conservation of [θ] might be interpreted as resistance to convergence). Within a limited area in southern Galician we find the perfect root [fih]: *figuen, figueches, figo*, and in some points of Asturias there exist roots such as [faθ] or [fa]: *faciche ~ faíche*, *facemos ~ faemos*.

The root [fih] probably has its origin in the present root *faguer* (a dialectal form corresponding to Standard *facer*). In these dialects, [fah], which initially only appeared in the 1SG.IND.PRS [fah-o] and in the SBJV.PRS [fah-a, fah-as, fah-amos], spread to the unstressed forms in the present tense group, creating innovations such as INF [fah-'eɾ] (*faguer*), 1PL.IND.PRS [fah-'emos] (*faguemos*), 1PL.IND.PST.IPRF [fah-'ia] (*faguía*) etc.[12] Within this area, the present root's RC [h] spread to the perfect, probably eliminating old forms with [ʃ] or [θ] and giving rise to new forms like 1SG.IND.PST.PRF ['fiheŋ], 3SG.IND.PST.PPRF [fi'hɛɾa] and so on. The spread of [h] is independent of the position of stress: [h] has spread throughout the perfect forms of *faguer*, as required by coherence. However, the appearance of RC [h] in the perfect root of *faguer* under the influence of the present root clearly flouts the principle of convergence.

Convergence and coherence are threatened in Asturian Galician in varieties like A.5 in (9), where we find [fiʃ] for 1SG.IND.PST.PRF, [fɛʃ] and [fɛθ] for 3SG.IND.PST.PRF, but [faθ], with the RV [a], characteristic of the present root, in unstressed perfect forms: *faciches, faíches, fadiches, faguiches* (Babarro 2003, p. 399-404). Conjugations like that shown in A.5 affect coherence and convergence: in A.5, perfect forms such as [faθitʃe], [faθɛmos] are linked to forms with [faθ] in the present (1PL.IND.PRS *facemos*, 1SG.IND.PAST.IPRF *facía*); and the perfect form [fa'itʃe] in A.6 seems to be linked to the present form [fa] (1PL.IND.PRS *faemos* and 1SG.IND.PAST.IPRF *faía*).

12. The forms of the FUT.IND and COND follow their own dynamics: IND.FUT *farei* or *faguerei ~ facerei*, COND *faria* or *faguería ~ facería* (Map 266 in *ALGa I*).

Another instance of *unruly forms* is represented by innovations in the perfect forms of *pór*/*poñer*. This verb extended a root [poɲ] (originally only appearing in the 1SG.IND.PRS [poɲ-o] and in the SBJV.PRS [poɲ-a]) to all the present-root tenses except 2SG.IND.PRS, 3SG.IND.PRS, 2SG.IMP and PTCP, which maintained the original root forms. In (10), Paradigm A of *pór*/*poñer* shows the situation in the present root prior to the change, Paradigm B the outcome of the generalisation of [poɲ]; (10) also shows the conjugation of *comer* 'to eat', a regular verb of the 2nd conjugation, for comparison:

| 10. | Paradigm A | Paradigm B | regular verb C-II |
|---|---|---|---|
| 1SG.IND.PRS | [poɲ]-o | [poɲ]-o | [kom]-o |
| 2SG.IND.PRS | [pɔ]-s | [pɔ]-s | [kɔm]-es |
| 3SG.IND.PRS | [pɔŋ] | [pɔŋ] | [kɔm]-e |
| 1PL.IND.PRS | [po]-mos | [poɲ]-e-mos | [kom]-e-mos |
| 2PL.IND.PRS | [pon]-des | [poɲ]-e-des | [kom]-e-des |
| 3PL.IND.PRS | [pɔŋ] | [pɔɲ]-e-n | [kɔm]-e-n |
| 2SG.IMP | [poŋ] | [poŋ] | [kom]-e |
| 1SG.IND.PST.IPRF | [puɲ]-a | [poɲ]-í-a | [kom]-í-a |
| 1SG.FUT | [po]-rei | [poɲ]-e-rei | [kom]-e-rei |
| 1SG.COND | [po]-ría | [poɲ]-e-ría | [kom]-e-ría |
| INF | [po]-r | [poɲ]-e-r | [kom]-e-r |
| GER | [po]-ndo | [poɲ]-e-ndo | [kom]-e-ndo |

Paradigm A in (10) seems to be retreating today at the expense of different versions of B. The spread of [poɲ] implies the regularisation of the verb:

a) In the TV, [e] and [i], characteristic of the 2nd conjugation, appear in Paradigm B of *pór*/*poñer* in (10): *po-mos* > *poñ-e-mos, puñ-a* > *poñ-í-a*, *po-r* > *poñ-e-r*;
b) Except in the 2SG.IND.PRS, 3SG.IND.PRS, 2SG.IMP and PTCP, we find a root ended in [ɲ], always followed by a vowel: *poñ-o, poñ-emos, poñ-er...*;
c) The special athematic forms [puɲ] of the IND.PST.IPRF disappear and are replaced by [poɲ] followed by the TV [i]: *puñ-a* > *poñ-ía*;
d) Save in the 2SG.IND.PRS [pɔs], root forms lacking a nasal RC are jettisoned: *po-mos* > *poñ-emos, pó-r* > *poñ-er*;
e) The new forms are adapted to the stress pattern of regular verbs: stressed roots *pó-mos, pón-des, pó-r* > unstressed roots *poñ-é-mos, poñ-é-des, poñ-é-r*.

The reason why the verb *pór*/*poñer* is interesting is that two conjugation models coexist (not to mention mixed paradigms), sometimes even in the same speaker.

Some dialects with Paradigm B for *pór*/*poñer* in the present substituted [ɲ] for the prototypical perfect root RC [ʃ] (see Paradigm C in 11), taking this nasal from the present root and creating a new Paradigm, D, shown in (11):

| 11. | Paradigm C | Paradigm D |
|---|---|---|
| 1SG.IND.PST.PRF | ['puʃ-eŋ] | ['puʃ-eŋ] |
| 2SG.IND.PST.PRF | [puʃ-'ɛtʃes] | [puɲ-'ɛtʃes] |
| 3SG.IND.PST.PRF | ['puʃ-o] | ['puʃ-o] |
| 1PL.IND.PST.PRF | [puʃ-'ɛmos] | [puɲ-'ɛmos] |
| 1SG.IND.PST.PPRF | [puʃ-'ɛra] | [puɲ-'ɛra] |
| 1SG.SUB.PST | [puʃ-'ɛse] | [puɲ-'ɛse] |

In Paradigm D in (11) the new perfect root [puɲ] is always unstressed; the old [puʃ] remains, stressed, in the 1SG/3SG.IND.PST.PRF. Paradigm D violates coherence, since the perfect root takes two different forms, [puʃ] and [puɲ]; it also violates convergence, since a perfect root feature, the RC [ʃ] of the old Paradigm C, is replaced by the RC [ɲ] of the present root (with little support in the perfect system: the RC [ɲ] only appears in the unstressed forms of the verb *vir*, *viñ-emos, viñ-ese,* etc.). In any case, the *ALGa* shows that coherence starts to be restored by first introducing [puɲ] in the 1SG.IND.PST.PRF (points C1, C32, L2, L32, P2 and 013) and, to a lesser degree, in the 3SG.IND.PST.PRF (points C32, P2, and O13), which demonstrates the stubbornness of the 3SG (see 14 below).

Note, however, that in the creation of the perfect [puɲ] and [fih] speakers use the RCs [ɲ] and [h] of the present roots [poɲ] and [fah], respectively, but not the present roots' RVs [o] and [a]. On the contrary, in the case of *facer* in A.5 and A.6, the full present root is adopted: [fa] or [faθ].

## 3. An analysis using the Exemplar Model

Summarising the data, we may say that irregular perfect word forms can be analysed as consisting of:

1) Irregular, unpredictable, unanalysable roots, individually learned and stored in the lexicon, with bonds between them that create family resemblances and the properties of convergence and coherence.
2) A set of semi-productive, semi-predictable formatives (the TVs /e/ ~ /ɛ/ and the NP /o/) and morphophonological patterns (stressed roots in the 1SG/3SG.IND.PRT.PRF; lack of TV in the 3SG.IND.PRT.PRF);
3) A set of fully predictable, regular exponents and morphophonological patterns.

If we now focus on the irregular perfect roots and only pay attention to the roots we have been exploring, we find that:

4) The RV of the perfect root of one lexeme may serve as a model influencing the perfect roots of other lexemes (e.g. [tɾowʃ] > [tɾuʃ], like [puʃ]);
5) The RC of the perfect root of one lexeme may spread to the perfect root of other lexeme ([fiz] > [fiʒ], like ([puʒ]);

6) The RC of the present root of one lexeme can be extended to the perfect root of the same lexeme ([puʃ] > [puɲ], like [poɲ]).

In all of these cases, RCs and RVs seem to behave autonomously. How can we handle these facts if we assume that the root is a simple, unanalysable unit? Is the root a pre-existing, unanalysable formative to which other formatives are added, or something that speakers build? Do the roots have inner structure? Is the root a given, prior to the word, or a structure emerging from the word?

If we consider that [puʃ], [trowʃ], [biɲ] etc., do not derive from other simpler units through productive morphological processes, we may conclude that they are units without internal structure that must be individually memorized, along with the contexts in which they appear: a) their morphosyntactic representations; and b) the allomorphs of the TV and the PN with which they co-occur (the TVs [ɛ] and [e] and the PN [o] imply the perfect root, and the perfect root implies these endings).

12.

| PÓR/PONER | DICIR | HABER |
|---|---|---|
| V[IND.PST.PRF] | V[IND.PST.PRF] | V[IND.PST.PRF] |
| V[IND.PST.PPRF] | V[IND.PST.PPRF] | V[IND.PST.PPRF] |
| V[SBJV.PST] | V[SBJV.PST] | V[SBJV.PST] |
| /puʃ/ | /diʃ/ | /owb/ |

It would be possible to propose phonological rules that generate the perfect root of each verb in a way resembling Gleason's (1961, p. 74) replacive morphs, where he considers English forms like *sang* (past of *sing*) derived complex units. But let us recall that for the American structuralists those processes are only descriptive tools that do not have cognitive reality, which is precisely what current linguistics aims to describe: "the psychological reality" of the linguistic item.

### 3.1. *Some theoretical features of Exemplar Models*

The principal features of Exemplar Morphology (Bybee 1985, 1988, 1995, 2001, 2010; Langaker 2000) are the following:

a) The stored linguistic representations contain all the predictable features and all the information needed to use them in their appropriate contexts.
b) The representations make up a network that gives them internal structure.
c) Morphological rules, restrictions or well-formedness conditions do not exist outside the stored items.
d) Grammatical structures emerge from the stored material.
e) Frequent regular forms are stored in exactly the same way as irregular forms. Storage and frequency of use have an impact in the structure of the grammar.
f) Linguistic variation and change are sources that help us to discover the structure of a synchronic language state.

Exemplar Morphology is a kind of Word and Paradigm model (Matthews 1991) based on the storage of entire words; it is an abstractive model, not a constructive one, in Bevlins' terminology (2006). Its theoretical tools, such as *lexical strength*, *lexical connections*, *schemas* or the notion of *autonomy* of an exemplar, are strongly dependent on the *frequency of use* of each item.

The model attributes lexical strength to linguistic items; strength increases with frequency of use:

> Words with high lexical strength are easy to access, serve as bases of morphological relations and exhibit an autonomy that makes them resistant to change and prone to semantic independence. Thus lexical strength explains why irregular formations are usually of high token frequency. (Bybee 1995, p. 428)

Langacker bases lexical strength on the automation and creation of routines:

> The occurrence of psychological events leaves some kind of trace that facilitates their reoccurrence. Through repetition, even a highly complex event can coalesce into a well-rehearsed routine that is easily elicited and reliably executed. (Langacker 2000, p. 3)

This coalescence produces autonomy of more frequent forms, which may go as far as to lose part of their internal structure. The most autonomous items (e.g. frequent irregular verb forms) tend to escape analogical regularisation by virtue of their lexical strength; on the contrary, less autonomous items tend to get regularised by virtue of the *lexical connections* that give structure to the items individually stored:

> Words entered in the lexicon are related to other words via sets of lexical connections between identical and similar phonological and semantic features. The connections among items have the effect of yielding an internal morphological analysis of complex words […]. Even though words entered in the lexicon are not broken up into constituent morphemes, their morphological structure emerges from the connection they make with other words (Bybee 1995, p. 428-429).

Lexical connections also vary in lexical strength in accordance with the individual lexical strength of the items. The more autonomous the forms, the weaker the lexical connections between them; the less autonomous the forms, the stronger the lexical connections.

The existence of sets of items sharing phonological and semantic patterns produces *schemata*, elements that emerge from an abstractive process (Langaker 2000, p. 3), defined as "the emergence of a structure through reinforcement of the commonality inherent in multiple experiences". *Schemata* are "the commonality that emerges from distinct structures when one abstracts away from their points of difference by portraying them with lesser precision and specificity" (Langaker 2000, p. 3). In Figure 1 we see how the lexical connections work in a regular verb, *bater* 'to beat', and how schemata emerge.

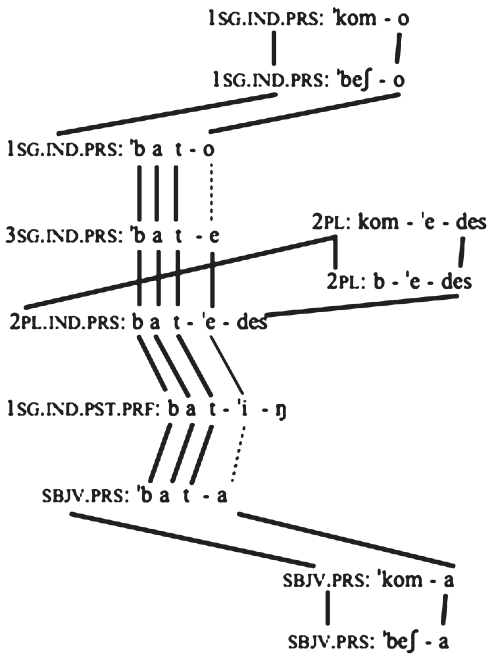



Figure 1

In Figure 1 we see how the schema that segregates the root [bat] from *bat-o, bat-es, bat-a, bat-ín* is generated. We also see the emergence of the schema {[o] ⇔ V[1SG.IND.PRS]}, which appears in *bat-o, com-o, vex-o*; the schema {[a] ⇔ V[SBJV.PRS} in *bat-a, com-a, vex-a*; the schema {[des] ⇔ V[2PL]} in *bate-des, come-des, ve-des, canta-des*, *parti-des*, etc. It is in this sense that we can say that exponents like [des] and roots like [bat] emerge from stored material.

The schema {[o] ⇔ V[1SG.IND.PRS]} is abstract: it is obtained by comparing *cant-o, vend-o, coll-o, sig-o, pid-o*; it works in the three Galician conjugations. It may become more concrete if we find more commonalities: the word forms with {[o] ⇔ V[1SG.IND.PRS]} are stressed on the penultimate syllable, so that we could add this feature, {[o] ⇔ V[1SG.IND.PRS] ⇔ [...σ́σ]}; it appears linked to the root, without any intervening TV; these commonalities put aside the differences (such as which roots it links to, information about the verb's conjugation, the lexeme's meaning, etc.). The schema is used when an infrequent verb, which must be constructed on the fly, is conjugated: *zarp-o*, 1SG.IND.PRS of *zarpar* 'to set sail' (the least used verb in the Bugarín 2007 corpus).

Geert Booij (2010, p. 41-42) highlights four properties of schemata: they a) have *variables*, elements that may be filled by different units; b) may embed within each another, producing a hierarchy in which the more abstract

ones encompass the more concrete ones; c) represent knowledge in each one of these levels of abstraction; and d) are active elements that speakers use to produce or analyse new utterances.

Schemata also have diverse degrees of lexical strength, depending on the frequency of the items containing them, the token frequency, and the frequency of each schema, the type frequency: "The strength of lexical representations of individual items is in part a reflection of token frequency, while the strength [...] of lexical associations or schemas is built up by the type frequency" (Bybee 1995, p. 452).

A strong schema may spread to items that did not contain it before. In Galician, [des] is the default exponent of 2PL in verbs: [de] is only used in the 2PL.IMP (*cantade*) and [stes] only in the 2PL.IND.PRT.PRF (*cantastes*); [des] is used elsewhere. In a lot of dialects, [des] spread to the forms of the 2PL.IND.PST.PFR, where 2PL was initially marked with [stes]; the spread of [des] created a hyper-characterized schema {[stedes] ⇔ V[2PL.IND.PRT.PRF]} (*collestes* > *colléstedes*) by virtue of the lexical strength of {[des] ⇔ V[2PL]}.

In order to understand how {PÓR/POÑER ⇔ V[1SG.IND.PRS/SBJV.PRS] ⇔ [poɲV]} spread to other present forms in Paradigm B of (11) (*pó-mos* > *poñ-é-mos*), we should note that:

A) The root [poɲ] appears in the 1SG.IND.PRS and in the SBJV.PRS; in Bugarín's corpus (2007, p. 830) the forms corresponding to these properties constitute 7.989% of the uses of *pór*/*poñer* and 12.388% of its uses in the present-root forms. The forms of 1SG.IND.PRS figure among the most frequent, and, in so doing serve as a model (Bybee 1995). Thanks to this frequency, a schema emerges that links PÓR/POÑER with [poɲV], a sequence that may spread to the rest of the present-root forms. The new schema of dialect-type B in (11) may be represented as {PÓR/POÑER ⇔ V[INFECTUM] ⇔ [poɲV]},[13] meaning that [poɲ] and the variable [V] are no longer linked only to the properties 1SG.IND.PRS and SBJV.PRS and the exponents [o] and [a], and become linked to a larger set: all the present-root tense exponents, NP [o], TAM [a] and the allomorphs of the TV (*poñ-o, poñ-emos, poñ-ía*). The forms corresponding to the 2SG.IND.PRS, 3SG.IND.PRS and 2SG.IMP resist, owing to their individual token frequency.

B) To the lexical strength of {PÓR/POÑER ⇔ V[INFECTUM] ⇔ [poɲV]} there must be added the lexical strength of the inflectional schemata of regular verbs. In these verbs, we find a TV between the root and the TAM and NP affixes: *com-e-mos, com-e-re-mos*. In these schemata, the TV is associated with the [V] which follows the regular root. So in PÓR/POÑER not only does the root [poɲ] spread, but the word forms also take all the affixes and prosodic schemata corresponding to regular verbs, as shown in (13):

13. The notations V[INFECTUM] and V[PERFECTUM] will be used here as cover terms for the sets of morphosyntactic words realized through the corresponding root, e.g. {V[INFECTUM] ⇔ [poɲ]} refers to all the verbal forms of *pór*/*poñer* with the root [poɲ]: the 1SG.IND.PRS, 1PL.IND.PRS, 2PL.IND.PRS, SBJV.PRS, etc. Thus, INFECTUM and PERFECTUM are variables.

13. {V[1PL.IND.PRS] ⇔ [-'V-mos]}
old ['po-mos] > new [poɲ-'e-mos], like [komV] > [kom-'e-mos]

{V[1SG.IND.PST.IPRF] ⇔ [-'i-a]}
old ['puɲ-a] > new [poɲ-'i-a], like [komV] > [kom-'i-a]

So, the TV's introduction is also a requirement of the regular verbs' schemata, those with the higher frequency type. In these schemata, the TAM and the PN are preceded by the TV, and the TV is preceded by a regular root. The innovation *poñ-e-mos* results from the spread of the root's allomorph [poɲ], based on its token frequency, and the spread of the use of the regular prosodic patterns and affixes, based on their type frequency. The restrictions and rules that guide this process are not stored outside of the forms, but emerge from the stored material. Figure 2 represents part of the network that links the forms of *pór*/*poñer* in Paradigm A in (11) before levelling; figure 3 represents parts of the network in Paradigm B in (11) after levelling; note the autonomy of ['pɔs] 2SG.IND.PRS and ['pɔŋ] 3SG.IND.PRS.

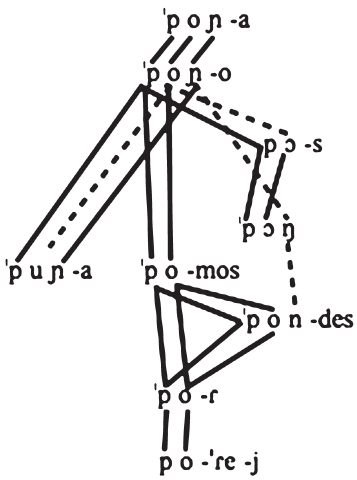



Figure 2

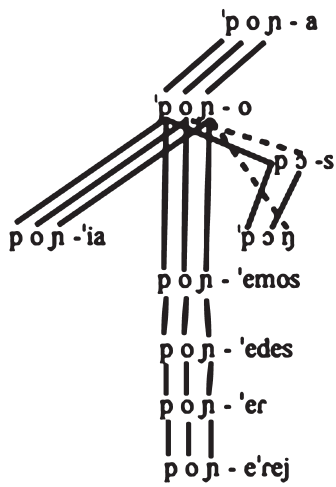



Figure 3

### 3.2. *Regularizations in the perfect root and emerging structure*

We have seen in (9) and (11) that *facer* and *pór*/*poñer* present evolutions opposite to convergence, since they take elements of their present tenses to create their perfect forms. In (9) we have seen how [fih] spread to all the perfect, adding coherence. In (11), the root [puɲ] encounters resistance in the 1SG and 3SG of the IND.PST.PRF. But the most interesting fact is that, in order to create [puɲ] (the perfect root of *pór*/*poñer*), only the present RC [ɲ] was taken, while the present RV [o] was ignored; and in [fih] (perfect

root of *facer*), the present RC [h] was adopted, while the present RV [a] was ignored. So, the levelling process only took into account the present RCs [ɲ] and [h], not the present RVs [o] and [a]. The change did not affect the irregular allomorphs of the TV and stress patterns: the usual characteristics of irregular perfect forms are maintained.

Figure 4 shows the lexical connections in three evolutionary stages of the *pór*/*poñer*'s perfect forms. In Old Galician, ['puʒi] 1SG.IND.PST.PRF was the outcome of phonological evolution; the perfect paradigm of *pór*/*poñer* was not coherent (['puʒ-i] vs. ['poz̲-o]), but was convergent: the present and perfect roots were different. Coherence was recovered and convergence reinforced in Common Galician when the paradigm was regularized through the spread of ['puʒ] to the rest of the perfect paradigm. However, the innovative system that is now being created through the spread of the RC [ɲ] reduces coherence, since the change leaves ['puʃeŋ] 1SG.IND.PST.PRF and ['puʃo] 3SG.IND.PST.PRF unaffected; and the innovative system violates convergence, since the perfect abandons the RC [ʃ] and takes [ɲ] from the present root.

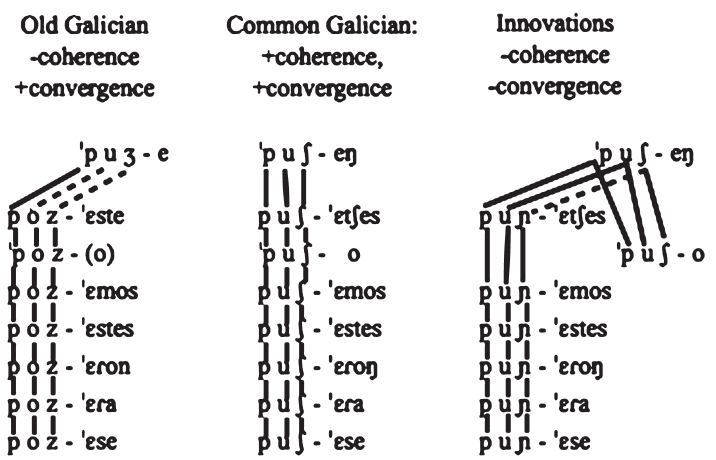
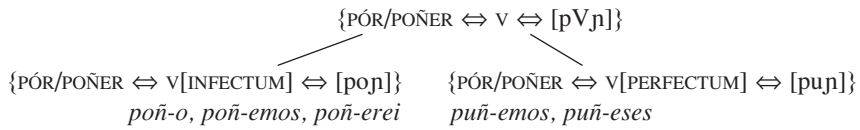



Figure 4

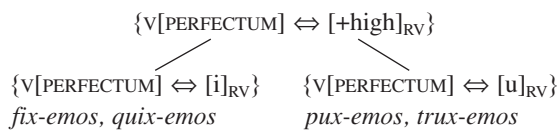
In order for [fih] and [puɲ] to appear in the perfect, it is necessary for schemata like {FACER ⇔ V ⇔ [fVh]} and {PÓR/POÑER ⇔ V ⇔ [pVɲ]} to emerge; in these cases, the phonological representations are more abstract, [fVh] and [pVɲ], with a variable [V] that only tells us that the roots must contain a RV. The RCs [h] in [fih-ɛmos] and [ɲ] in [puɲ-ɛmos] agree with those of the present root, but the high RVs [i] in [fih] and [u] in [puɲ] are taken from the batch of perfect formal resources.

In the case of *pór*/*poñer*, {V ⇔ [pVɲ]} is more abstract than {V[PERFECTUM] ⇔ [puɲ]} or {V[INFECTUM] ⇔ [poɲ]}; both {V[PERFECTUM] ⇔ [puɲ]} and

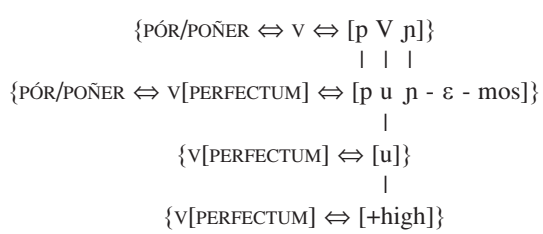
{V[INFECTUM] ⇔ [poɲ]} inherit the basic form of their roots from {V ⇔ [pVɲ]}:




In order to explain *puñ-eches, puñ-estes, puñ-ese* we need another schema to preserve the RV [u] in the perfect. The schema that explains why RV [u] remains in [puɲ] is {V[PERFECTUM] ⇔ $[u]_{RV}$}, which also appears in many dialectal forms: *trux-emos, tru-emos, hub-emos, sup-emos*. This is an instantiation of another more abstract schema, {V[PERFECTUM] ⇔ $[+high]_{RV}$}, which dominates and covers not only *trux-emos, tru-emos, hub-emos*, but *fix-emos, quix-emos, dix-emos*, instantiations of {V[PERFECTUM] ⇔ $[i]_{RV}$}, also responsible for the RV of [fih-ɛmos]. There are even some verbs that alternate between both schemata: *tiv-emos ~ tuv-emos*, *estiv-emos ~ estuv-emos*, *andiv-emos ~ anduv-emos*. In other verbs, {V[PERFECTUM] ⇔ $[u]_{RV}$} may alternate with {V[PERFECTUM] ⇔ $[ow]_{RV}$}:[14] *troux-emos ~ trux-emos*, *soupemos ~ soubemos*, *houbemos ~ hubemos*, etc.:




The root [puɲ] shows the conflation of various hierarchical schemata:




Schemata are not rules with inputs and outputs, but elements that emerge and give structure to the stored individual representations. The schema {V[PERFECTUM] ⇔ [+high]} emerges from the storage of *fixen, quixen, puxen, truxen* etc. It has psychological reality since it is a guiding element in linguistic change. Levelling creates forms like *puñ-emos* because speakers extract schemata like {PÓR/POÑER ⇔V[PERFECTUM] ⇔ [u]} and {PÓR/POÑER ⇔ V ⇔ [pVɲ]} from the stored material.

14. The forms containing diphthongs as RVs (*troix-, puid-, poid-*) are also subject to {V[PERFECTUM] ⇔ $[+high]_{RV}$}, since semivowels are asyllabic realizations of high vowels.

Figure 5 shows a proposal for the representation of the lexical connections of Paradigm D for *pór*/*poñer* in (11): [puʃ-eŋ] and [puʃ-o] are autonomous, since they maintain their own RC [ʃ], but use the RV [u], characteristic of perfect roots.

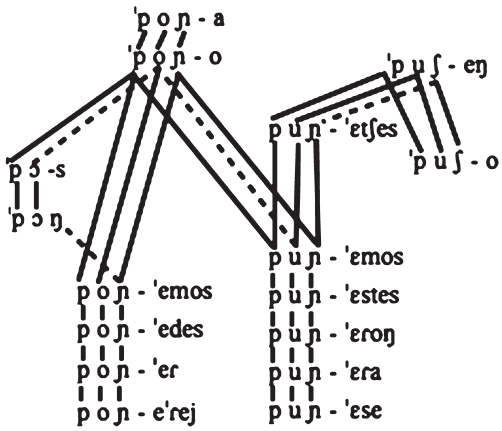



Figure 5

However, as already mentioned, the ALGa shows the birth of the new Paradigms E and F of *pór*/*poñer* shown in (14):

| 14. | Paradigma E | Paradigma F |
|---|---|---|
| 1SG.IND.PST.PRF | [puɲ]-en | [puɲ]-en |
| 2SG.IND.PST.PRF | [puɲ]-eches | [puɲ]-eches |
| 3SG.IND.PST.PRF | [puʃ]-o | [puɲ]-o |
| 1PL.IND.PST.PRF | [puɲ]-emos | [puɲ]-emos |

These paradigms originate from the strength of the lexical connections of [puɲ], based on type frequency. With the spread of [puɲ] to the 1/3SG of the IND.PST.PRF coherence is restored. The form of 1SG is regularized before that of 3SG; this is also happening with *vir*, where the creation of a coherent form *viñ-en* in the 1SG is not uncommon; in those dialects where *viñ-en* replaces *vin*, only the stubborn and autonomous forms of the 3SG (*veu, viu, vén*) remain. We can understand the preservation of irregularity in the 3SG *puxo* in connection with the fact that, in the Bugarín (2007) corpus, the use index of 3SG.IND.PST.PRF is 40.27% of all perfect forms, but the use index of 1SG is only 13.11%; while the 3SG.IND.PST.PRF of *vir* has 42.57% and the 1SG only has 8.05%. Use of the 3SG is so frequent that its forms acquire autonomy. Paradigm F in (14) is a consequence of the strength of type frequency: in Paradigm F, complete coherence is restored.

But frequency does not explain everything; it must interact with other linguistic factors:

| | *vir* | *facer* | *pór*/*poñer* |
|---|---|---|---|
| 1SG.IND.PST.PRF | 8.05% | 6.97% | 13.11% |
| 3SG.IND.PST.PRF | 42.57% | 24.94% | 40.27% |
| 3PL.IND.PST.PRF | 13.16% | 10.34% | 16.02% |

Use indices of some perfect forms (Bugarín 2007)

The 3PL forms have use indices intermediate between those of 1SG and 3SG. These indices should guarantee autonomy and resistance against regularization, yet the 3PL forms behave the same way as the other perfect forms. The only explanation is that the location of stress is significant and helps to group these forms with the others.[15]

Changes like [fiʃ] ~ [fiθ] > [fih] under the influence of [fah] or those like [puʃ] > [puɲ] under the influence of [poɲ] show that the root and its parts, RVs and RCs, are also emergent units. However, RVs and RCs do not only constitute a part of the root: they are elements with their own personality and may operate with some degree of autonomy. The root [puʃ] in Paradigm C in (11) points to IND.PST.PRF, IND.PST.PPRF and SBJV.PST *en bloc*. Nevertheless, the root [puʃ] in Paradigm D in (11) may be analysed as containing the RV [u], an index of the perfect, plus the RC [ʃ], an index of 1/3SG.IND.PST.PRF. In Paradigm E in (14), the RC [ʃ] only marks the 3SG.IND.PST.PRF. Finally, in Paradigm F in (14), the RV [u] is the only mark of the perfect, since the RC [ɲ] is shared with the present root.

The uses of the RC [ʃ] to mark 1/3SG.IND.PST.PRF in Paradigm D in (11) and to mark 3SG.IND.PST.PRF in Paradigm E in (14) result in an increment in the root's structure, with the creation of a morphological contrast inside a previously unanalysable unit; this phenomenon Jespersen called *secretion*:

> By secretion I understand the phenomenon that one portion of an indivisible word comes to acquire a grammatical signification which it had not at first, and is then felt as something added to the word itself. Secretion thus is a consequence of a 'metanalysis'...; it shows its full force when the element thus secreted comes to be added to other words not originally possessing this element. (Jespersen 1922, p. 384)

We may represent *secretion* as in (15):

15. [p u ʃ] > [p u ʃ]
| |
RV RC]R

15. Nevertheless, in the present-root tenses of *pór*/*poñer* some dialects that have extended the use of the root [poɲ] and created Paradigm B of (10) keep [pɔŋ] forms without the analogical palatal nasal (and, therefore, with neither TV nor PN) in the 3PL.IND.PRS, rather than creating form ['pɔɲ-e-ŋ] by analogy; the same is true of the 3PL.IND.PRS of *ter* and *vir*, which tend to preserve the old forms ['tɛŋ] and ['bɛŋ], respectively, in the same dialects and do not create the analogical ['tɛɲ-e-ŋ] and ['bɛɲ-e-ŋ]. In these cases, frequency helped to preserve the more conservative forms.

In order to understand why the expression of 1SG/3SG.IND.PST.PRF in *pór*/*poñer* is regularized in Paradigms E and F of (14) in spite of being autonomous, we must present another notion developed by Bybee (1985), that of *relevance*. A category "is relevant to the verb to the extent that *the meaning of the category directly affects the lexical content of the verb*" (Bybee 1985, p. 15). When the meaning of the category is very relevant to the verb, its expression tends to affect the verb root; when it is less relevant, it can be expressed through affixes or syntactic procedures. Person agreement with the subject is not as relevant as tense, mood or aspect, "since it refers to an argument of the verb, and not to the action or state described by the verb itself". Thus, one assumes that person agreement should not affect the form of the root. So the autonomy of the forms corresponding to 1SG/3SG.IND.PST.PRF in Paradigms E and F goes against relevance, since it marks person agreement. Regularization of the root eliminates the forms marked for person agreement. If this analysis is correct, the restoration of coherence in this case is the outcome of relevance.

## 4. Conclusions

Martin Maiden (2001) identified two properties of perfect roots in Spanish irregular verbs that are also found in Galician and Portuguese irregular verbs: *coherence* and *convergence*. Because of coherence, perfect roots tend to be identical within the paradigm of each lexeme; coherence is responsible for the analogical reconstruction of roots within the perfect paradigm. Because of convergence, the perfect forms of a given lexeme tend to share formal similarities with perfect forms of other lexemes. However, the form and distribution of perfect roots (and the properties of *convergence* and *coherence*) would be fanciful and unexplainable without notions like *lexical connection*, *lexical strength*, *relevance*, and *frequency of use*, proposed in the Exemplar Model. The changes undergone by forms throughout history also show how linguistic structure is a property emerging from storage.

Frequency of use is a basic element in Exemplar Morphology, since the form of the grammar depends in part on this parameter. Tendencies like coherence and convergence are expressions of the *emergence* of patterns linked to frequency:

> The notion of emergent structure has become important in various branches of the sciences in the last two decades. The basic idea is that what may appear to be a coherent structure created according to some underlying design may in fact be the result of multiple applications or interactions of simple mechanisms that operate according to local principles and create the seemingly well-planned structure as a consequence. (Bybee and Hooper 2000, p. 10)

Therefore, frequency of use, lexical connections, lexical strength, and relevance are some of the elements responsible for producing and maintaining *coherence* and *convergence* in Galician (and Portuguese and Spanish) verbs.

## Abbreviations

| | |
|---|---|
| 1 | First person |
| 2 | Second person |
| 3 | Third person |
| FUT | Future |
| IND | Indicative |
| IPRF | Imperfect |
| PL | Plural |
| PN | Person and Number suffix |
| PPRF | Pluperfect |
| PRF | Perfect |
| PRS | Present |
| PST | Past |
| PTCP | Participle |
| R | Root |
| RC | Root consonant, last consonant of the root |
| RV | Root vowel, last vowel of the root |
| SBJV | Subjunctive |
| SG | Singular |
| TAM | Tense, Aspect and Mood suffix |
| TV | Thematic vowel |
| V | Verb |
| V | Vowel |

## References

*ALGa I* = Instituto da Lingua Galega (1990). *Atlas lingüístico Galego. Vol. 1. Morfoloxía verbal*, A Coruña, ILG/Fundación Pedro Barrié de la Maza.

Álvarez, Rosario and Xove, Xosé (2002). *Gramática da lingua galega*, Vigo, Galaxia.

Álvarez, Rosario, Regueira, Xosé Luís and Monteagudo, Henrique (1986). *Gramática galega,* Vigo, Galaxia.

Babarro, Xoán (2003). *Galego de Asturias : delimitación, caracterización e situación sociolingüística*, A Coruña, Fundación Pedro Barrié de la Maza.

Booij, Geert (2010). *Construction Morphology*, Oxford: OUP.

Bugarín, María Xesús (2007). *O galego fundamental. Dicionario de frecuencias*, A Coruña, Fundación Pedro Barrié de la Maza.

Bybee, Joan (1985). *Morphology*, Amsterdam, John Benjamins.

Bybee, Joan (1988). "Morphology as lexical organization", Hammond, M. and Noonan, M. (eds.), *Theoretical morphology,* San Diego, Academic Press, 119-41.

Bybee, Joan (1995). "Regular morphology and the lexicon", *Language and Cognitive Processes* 10, 425-55.

Bybee, Joan (2001). *Phonology and language use*, Cambridge, CUP.

Bybee, Joan (2010). *Language, usage and cogntion*, Cambridge, CUP.

Bybee, Joan and Hooper, Paul (eds.) (2001). *Frequency and the emergence of linguistic structure,* Amsterdam, John Benjamins.

BEVLINS, James P. (2006): "Word-based morphology", *Journal of Linguistics* 42, 531-573.
FERNÁNDEZ REI, Francisco (1990). *Dialectoloxía da lingua galega*, Vigo, Xerais.
FERNÁNDEZ REI, Francisco (1998). "Vocal temática e conxugación verbal. A expresión da clase mórfica en español, catalán e galego moderno", Kremer, Dieter (ed.), *Homenaxe a Ramón Lorenzo, Vol. 2*, Vigo, Galaxia, 591-613.
FERREIRO, Manuel (1995). *Gramática histórica galega*, Santiago de Compostela, Laiovento.
GLEASON, H. A. (1961). *An Introduction to Descriptive Linguistics. Revised Edition*, New York, Holt, Rinehart and Winston.
JESPERSEN, Otto (1922). *Language. Its Nature, Development and Origin*, London, George Allen & Unwind Ltd.
LADEFOGED, Peter and MADDIESON, Ian (1996). *The Sounds of the World's Languages*, Oxford, Blackwell.
LANGACKER, R.W. (2000). "A dynamic usage-based model", Barlow, M. and Kemmer, S. (eds.), *Usage based models of language*, Standford, CSLI: 1-63.
MAIDEN, Martin (2001). "A strange affinity: 'perfecto y tiempos afines'", *Bulletin of Hispanic Studies* 78, 441-464.
MARTÍNEZ MOSQUERA, Guadalupe (2000/2001). *O lexema do verbo põer/poer na época medieval*, Master thesis (unpublished), Santiago de Compostela, USC.
MATTHEWS, Peter (1991). *Morphology. Second Edition,* Cambridge, CUP.
PENNY, Ralph (2002). *A History of the Spanish Language*, Cambridge, CUP.
SANTAMARINA, Antón (1974). *El verbo gallego*, Santiago de Compostela, USC.
VARELA, Xavier (1999). "A evolución dos pretéritos irregulares sigmáticos", Álvarez, Rosario and Vilavedra, Dolores (eds.), *Cinguidos por unha arela común: Homenaxe ó profesor Xesús Alonso Montero, Vol. 1*, Santiago de Compostela, USC, 1047-1072.
WILLIAMS, Edwin (1967). *From Latin to Portuguese. Second Edition*, Philadelphia, University of Pennsylvania Press, Portuguese translation *Do Latim ao Português*, Rio de Janeiro, Tempo Brasileiro, 1975.

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