

Against nominal class features in Spanish

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APPROACHES TO INFLECTIONAL CLASS FEATURES

The problematic status of inflectional class features

§1 In many languages, lexical categories are arbitrarily subdivided into inflectional classes, each characterized by a particular set of inflectional markers.

E.g. two of the Old English noun classes

| | <i>a</i> -stem nouns | <i>n</i> -stem nouns |
|---------|-----------------------|----------------------|
| | <i>stān</i> 'stone' M | <i>guma</i> 'man' M |
| nom.sg. | <i>stān-∅</i> | <i>gum-a</i> |
| acc.sg. | <i>stān-∅</i> | <i>gum-an</i> |
| gen.sg. | <i>stān-es</i> | <i>gum-an</i> |
| dat.sg. | <i>stān-e</i> | <i>gum-an</i> |
| nom.pl. | <i>stān-as</i> | <i>gum-an</i> |
| acc.pl. | <i>stān-as</i> | <i>gum-an</i> |
| gen.pl. | <i>stān-a</i> | <i>gum-ena</i> |
| dat.pl. | <i>stān-um</i> | <i>gum-um</i> |

In a number of theoretical frameworks, this phenomenon has led to the postulation of inflectional class features: stems are claimed to bear abstract features that control the selection of inflectional markers.

E.g. $/\text{sta:n-}/_{\{[+N], [\text{Class}:a]\}}$ $/\text{yʊm-}/_{\{[+N], [\text{Class}:n]\}}$

§2 However, the status of inflectional class features is problematic:

- they are phonologically and semantically unmotivated, at least synchronically;
- they are syntactically inert, i.e. do not trigger agreement, drive syntactic selectional restrictions, etc. (cf. Bernstein 1993, but see Alexiadou & Müller 2005: §3);
- in this sense, their nature is purely morphomic in the sense of Aronoff (1994).

However, if inflectional class features do no more than pair up stems with sets of inflectional markers, then they would appear to be no better than mere diacritics.

§3 Possible responses to the problem of noun classes (Müller 2004: 189):

- to accept their existence as an imperfection in grammar design;
- to strengthen their rôle in the morphology
- to deny their existence altogether.

Strengthening the rôle of inflectional class features: decomposition

§4 If one cannot get rid of inflection class features, one may as well promote them to a more prominent position, and let them do more work in morphology than has previously been assumed.

Müller (2004: 190)

§5 The key idea: analyse class features as combinations of smaller elements, and use these elements to capture morphological generalizations (e.g. Alexiadou & Müller 2005, Ultra-Massuet 1999, Müller 2004, Trommer 2005).

§6 Müller (2004) on transparadigmatic syncretism in Russian (but cf. Baerman 2005)

- Inflectional markers in Russian nouns

| | I _M | II _{F,M} | III _F | IV _N | |
|----------|----------------------|-------------------|------------------|-----------------|-----------------|
| nom.sg. | -∅ | -a | -∅ | -o | |
| acc.sg. | -∅ (-a) [†] | -u | -∅ | -o | † animates only |
| dat.sg. | -u | -e | -i | -u | |
| gen.sg. | -a | -i | -i | -a | |
| inst.sg. | -om | -oj | -ju | -om | |
| loc.sg. | -e | -e | -i | -e | |

Observe, for example, that the null marker /-∅/ syncretically realizes the following feature combinations:

| | |
|-------------|---------------|
| {N, nom, I} | {N, nom, III} |
| {N, acc, I} | {N, acc, III} |

- Müller reduces these feature combinations to a single natural class

{[+N], [-β], [-oblique]}

by assuming the following decomposition of case features

| | |
|----------------|---------------------------------|
| nominative = | [+subject, -governed, -oblique] |
| accusative = | [-subject, +governed, -oblique] |
| dative = | [-subject, +governed, +oblique] |
| genitive = | [+subject, +governed, +oblique] |
| instrumental = | [+subject, -governed, +oblique] |
| locative = | [-subject, -governed, +oblique] |

and the following decomposition of class features

| | |
|-------|----------|
| I = | [+α, -β] |
| II = | [-α, +β] |
| III = | [-α, -β] |
| IV = | [+α, +β] |

In this analysis, the element [-β] can be used to capture the commonalities between classes I and III.

§7 Trommer (2005) on Amharic verb classes:

In a line with Mueller's (2003) analysis of noun classes in Russian, I argue that verb classes in Amharic must be actually decomposed in different, more basic diacritic features. These features correspond roughly to properties like "gemination in the perfect aspect" or "a after the penultimate root consonant", which characterize together traditional verb classes (e.g. "A,B,C" for triradical and "1,2" for quadriradical verbs).

Denying the existence of inflectional class features

§8 Until now, I have not seen any convincing empirical argument for the necessity of assuming inflection class features. But even if such arguments could be given for Indo-European languages, it is very unlikely that abstract inflectional classes constitute a universal factor of inflectional morphology.

Wunderlich (2003: 29)

§9 Blevins (2004) argues that the need for inflectional class features is an artifact of morpheme-based and stem-based, as opposed to word-based, morphological theories:

[..O]nce a morphological system has been disassembled into sets of stems and exponents, it is not in general possible to recover the original forms without introducing features that amount to “reassembly instructions”. In some cases, class indices may serve this purpose. This is the function of inflection class features in analyses of Russian that represent lexemes by non-predictive stem entries.

Blevins (2004: 82)

☞ Blevins’s Razor:

Inflectional class features are justified only insofar as it is justified to store stems and inflectional class exponents separately in the lexicon.

Recapitulation and preview

§10 In principle, these two responses to the problem of inflectional class features need not be incompatible: it may be the case that decomposition is appropriate in certain languages, whilst denial is appropriate in others. Such a pincer movement could conceivably have the effect of reducing the number of languages where inflection class features don’t “earn their keep”.

§11 This paper argues that, in the case of Spanish nominals, the appropriate response to the postulation of inflectional class features is denial:

- James Harris has long argued that Spanish nominal stems and nominal derivational suffixes need to be specified with inflectional class features that drive the selection of theme vowels (Harris 1983, 1985, 1991, 1992, 1994, 1995, 1996, 1997, 1999).
- But the putative nominal class features of Spanish cannot “earn their keep” through a decomposition analysis because Spanish nouns and adjectives have very little inflectional morphology: indeed the features’ only job is to select theme vowels (Alexiadou & Müller 2005: note 35; though cf. Harris 1999: 77).
- Harris’s argument rests on the assumption that nominal class membership and nominal class exponence are partially dissociated: more specifically, he claims that only in certain positions is the class feature of a stem or derivational suffix realized through the insertion of the corresponding theme vowel, viz. when the stem or suffix is not inside another derivational suffix.
- However, Harris’s analysis of the distribution of Spanish theme vowels is incorrect: nominal theme vowels demonstrably occur inside derivational affixes. There is no dissociation between nominal class membership and nominal class exponence. Accordingly, nominal stems and derivational affixes can be stored in the Spanish lexicon together with their respective theme vowels.

- ☞ The postulation of nominal class features in Spanish is therefore to be rejected in accordance with Blevins's Razor.

NB This result need not generalize with languages with more elaborate nominal inflection than Spanish.

NOMINAL STEM CLASSES IN SPANISH

The basic facts

- §12 In Spanish, each nominal stem and each nominal derivational suffix idiosyncratically selects one of the following theme vowels (see Bermúdez-Otero 2007a,b):

| | | | sg. | pl. | |
|-------------------|--|------|--------------|--|------------------|
| • <i>o</i> -stems | I | /-o/ | <i>cas-o</i> | <i>cas-o-s</i> | 'case' |
| • <i>a</i> -stems | II | /-a/ | <i>dí-a</i> | <i>dí-a-s</i> | 'day' |
| • <i>e</i> -stems | { normal <i>e</i> -stems <i>e</i> -only stems | III | /{-e,-∅}/ | <i>coch-e</i> <i>coch-e-s</i> <i>gas-∅</i> <i>gas-e-s</i> | 'car' 'gas' |
| | | IV | /-e/ | <i>envas-e</i> | <i>envas-e-s</i> |

The Roman numerals indicate the class labels in Harris (1999). All the above examples are masculine.

In addition, there is a small set of athematic stems that lack theme vowels altogether:

e.g. sg. *déficit*, pl. *déficit-s* 'deficit'

- §13 In normal *e*-stems, the theme vowel has two allomorphs: /-e/ and /-∅/.

- In the singular, /-e/ is selected in the phonology when the root ends in an unsyllabifiable sequence; otherwise, /-∅/ is selected.

/kotʃ{-e,∅}/ → [kótʃ-e] *[kotʃ] is phonotactically ill-formed

/gas{-e,∅}/ → [gás-∅]

- In the plural, /-e/ is selected morphologically, even when not necessary to attain phonotactic well-formedness.

/kotʃ{-e,∅}/_[+pl] → /kótʃ-e-s/

/indú{-e,∅}/_[+pl] → /indú-e-s/ 'Hindus'; *[indús] is phonotactically fine.

In *e*-only stems, in contrast, the theme vowel has no /-∅/ allomorph, and hence /-e/ is present in the singular even when not needed to attain phonotactic well-formedness:

/embas-e/ → [embás-e] though *[embás] is phonotactically fine.

- §14 Theme vowels are involved in the exponence of gender, but are not predictable from gender:

e.g. masculine nominals belong to the *o*-class by default, but the *o*-class also contains

- feminine nominals *man-o* (F) 'hand'
- dual-gender nominals *el testig-o* (M), *la testig-o* (F) 'the witness'
- neuter demonstratives *est-o* (N) 'this', cf. *est-e* (M)

The counterargument

§18 However, Harris's basic assumption concerning the distribution of theme vowels is incorrect: the absence of nominal theme vowels before derivational suffixes on the surface is caused by a phonological process of stem-final vowel deletion:

a. Stem-final vowel deletion

$$V \rightarrow \emptyset / \underset{\text{stem}}{\sigma_w} \text{ [suffix V] } \quad (\text{noniterative})$$

b. Phonological derivation

| | | |
|----|---------|----------------|
| UR | [man-o] | [[man-o] aθ-a] |
| SR | [má.no] | [ma.ná.θa] |
| | 'hand' | 'hand.AUG' |

§19 Lexical entries: 'hand' _{Noun stem} AUG
 /man-o/ /-aθ { -a_[Gender:F] } /
 [Gender:F] /-o

☞ Nominal class features are redundant in Spanish because theme vowels can be stored in the lexical entries of nominal stems and nominal derivational suffixes.

THE UNDERLYING DISTRIBUTION OF NOMINAL THEME VOWELS IN SPANISH: THE EVIDENCE

The phonological argument

§20 Premises: two phonological processes applying in sublexical (stem-level) domains:

- mid-vowel diphthongization under primary stress
- the prohibition of palatal consonants in the coda

Key datum

| | | |
|----------|--------------------------|--------------------------|
| a. Base | b. Stem-level derivative | c. Word-level derivative |
| [kwéʎ-o] | [koʎ-ár-∅] | [kweʎ-áθ-o] |
| 'neck' | 'collar, necklace' | 'neck.AUG' |

§21 If the UR of [kweʎ-áθ-o] is [[[k {o,we}ʎ] aθ] o], with the theme vowel of the base failing to occur inside the augmentative suffix, we incur a stratification paradox:

| | | |
|------------------|---|--|
| | a. -az-o is word-level | b. -az-o is stem-level |
| domain structure | [[_{WL} [_{SL} k {o,we}ʎ] aθ-o] | [[_{WL} [_{SL} k {o,we}ʎ-aθ-o]]] |
| SL | kwél | ko.ʎá.θo |
| WL | *kwe.lá.θo | *ko.ʎá.θo |

§22 If the UR of [kwe.ʎ-áθ-o] is [[[k{o,we}ʎ-o] aθ-o], with the theme vowel of the base occurring underlyingly inside the augmentative suffix, the paradox is resolved:

| | |
|------------------|--|
| domain structure | [[_{WL} [_{SL} k {o,we} ʎ-o] aθ-o]] |
| SL | kwé.ʎo |
| WL | kwe.ʎá.θo |

Morphological arguments (I)

§23 Harris (1991: footnote 9) asserts that a nominal theme vowel “is not an integral part of the stem” because “there is no independently motivated rule that would delete such a stem-final vowel”. However, the process of stem-final vowel deletion required to describe denominal derivation operates in exactly the same way in deverbal derivation and verbal inflection.

§24 Verbal theme vowels inside derivational suffixes:

| a. infinitive | b. <i>nomen agentis</i> | c. participle |
|------------------------|-------------------------|-------------------|
| <i>caz-a-r</i> ‘hunt’ | <i>caz-a-dor-∅</i> | <i>caz-a-d-o</i> |
| <i>habl-a-r</i> ‘talk’ | <i>habl-a-dor-∅</i> | <i>habl-a-d-o</i> |
| <i>com-e-r</i> ‘eat’ | <i>com-e-dor-∅</i> | <i>com-i-d-o</i> |
| <i>beb-e-r</i> ‘drink’ | <i>beb-e-dor-∅</i> | <i>beb-i-d-o</i> |
| <i>hac-e-r</i> ‘do’ | <i>hac-e-dor-∅</i> | <i>hech-o</i> |
| <i>pon-e-r</i> ‘put’ | <i>pon-e-dor-∅</i> | <i>puest-o</i> |
| <i>abr-i-r</i> ‘open’ | <i>abr-i-dor-∅</i> | <i>abiert-o</i> |
| <i>dec-i-r</i> ‘say’ | <i>dec-i-dor-∅</i> | <i>dich-o</i> |

§25 Verbal theme vowels deleted before vowel-initial stem-based suffixes:

| a. infinitive | b. <i>nomen agentis</i> (AUG) | c. <i>nomen actionis</i> |
|-----------------------------|-------------------------------|--------------------------|
| <i>acus-a-r</i> ‘accuse’ | <i>acus-ón-∅</i> | <i>acuse, acusación</i> |
| <i>fisg-a-r</i> ‘pry’ | <i>fisg-ón-∅</i> | <i>fisgoneo</i> |
| <i>trag-a-r</i> ‘swallow’ | <i>trag-ón-∅</i> | <i>trago</i> |
| <i>respond-e-r</i> ‘answer’ | <i>respond-ón-∅</i> | <i>respuesta</i> |

§26 Stem-final vowel deletion fails to iterate:

| | base | | derivative | |
|----------------------|--------------------------------|--|---------------------------------|---------------|
| Denominal derivation | <i>héro-e</i> ‘hero’ | | <i>hero-in-a, *her-in-a</i> | ‘heroine’ |
| | <i>bacala-o</i> ‘cod’ | | <i>bacala-ít-o, *bacal-it-o</i> | ‘cod.DIM’ |
| Deverbal derivation | <i>pele-a-(r)</i> ‘fight’ | | <i>pele-ón-∅, *pel-ón-∅</i> | ‘quarrelsome’ |
| | <i>mare-a-(r)</i> ‘make dizzy’ | | <i>mare-ón-∅, *mar-ón-∅</i> | ‘dizzying’ |

§27 Stem-final vowels fail to delete when underlyingly accented:

In denominal derivation:

| | a. base | | b. derivative | | |
|----------------------|---------|------------------|---------------|---------------------------|------------|
| | | UR | | SR | |
| <i>café</i> ‘coffee’ | | [[[kafé] in-a]] | | [ka.fe.í.na], *[ka.fí.na] | ‘caffeine’ |
| <i>papá</i> ‘Dad’ | | [[[papá] it-o]] | | [pa.pa.í.to] | ‘Dad.DIM’ |

In verbal inflection

| | | |
|-------|---------------------------------------|-------|
| | <i>partiais</i> | |
| a. UR | [[Word [[Stem [[Root part] -í]] -a | -js] |
| | part -SF -PRET.IPFV.IND -2PL | |
| b. SR | [par.tí.ajs] | |
| | ‘part.2PL.PRET.IPFV.IND’ | |

NB Second-person plural forms have penultimate stress despite containing a falling diphthong in their final syllable. This metrical pattern is impossible in nonverbal forms: e.g. [kom.bój] ‘convoy’, not *[kóm.boj] (Harris 1983: §4.4.2, 1995: 870).

Morphological arguments (II)

§28 Our analysis predicts that nominal theme vowels will be able to surface before derivational suffixes, provided that those suffixes are consonant-initial. Is this true? Harris (1983: 92, 147; 1996: 104) claims that it is not, adducing evidence from *nomina qualitatis* in *-dad-Ø*:

| | | | |
|-----------------|-------------|----------------------------|-------------------------|
| a. base | | b. <i>nomen qualitatis</i> | |
| <i>bell-o</i> | ‘beautiful’ | <i>bel-dad-Ø</i> | * <i>bell-o-dad-Ø</i> |
| <i>buen-o</i> | ‘good’ | <i>bon-dad-Ø</i> | * <i>bon-o-dad-Ø</i> |
| <i>herman-o</i> | ‘brother’ | <i>herman-dad-Ø</i> | * <i>herman-o-dad-Ø</i> |

§29 However, these constructions are altogether irrelevant to the matter at hand, since they are root-based rather than stem-based. Thus, the underlying representation of *bon-dad-Ø* is neither (a) nor (b), but (c).

| | | |
|----|--|---|
| a. | [[Stem [[Stem b{we,o}n-o] dad-{e,Ø}] | ✗ |
| b. | [[Stem [[Stem b{we,o}n] dad-{e,Ø}] | ✗ |
| c. | [[Stem [[Root b{we,o}n] dad-{e,Ø}] | ✓ |

This is confirmed by three facts:

1. The relevant suffix has four allomorphs: *-dad-Ø*, *-dad-Ø*, *-edad-Ø*, and *-idad-Ø*. Of these, only *-idad-Ø* remains productive (Santiago Lacuesta and Bustos Gisbert 1999: 4536). In contrast, *-dad-Ø* is never found in neologisms, but only in words inherited from Latin: e.g. *uēr-itāt-e-m* > *ver-dad-Ø* ‘truth’, which first underwent intervocalic *-t-* lenition, and then syncope and apocope (Pharies 2002: 163).
2. Many *nomina qualitatis* in *-dad-Ø* have bound bases that do not exist as independent stems: e.g. *frial-dad-Ø* ‘coldness’, *mortan-dad-Ø* ‘mortality’, *ver-dad-Ø* ‘truth’; note the absence of **ver-o*, **ver-a*, **ver-e*, or **ver-Ø* ‘true’ in modern Spanish. These constructions can only be root-based.
3. Since the allomorph *-dad-Ø* attaches to roots, Stratal OT predicts that it will be stem-level, since word-level constructions cannot be root-based (Bermúdez-Otero forthcoming). This prediction proves correct, for the addition of *-dad-Ø* bleeds diphthongization: e.g. [bon.dá^ð], not *[bwen.dá^ð].

Accordingly, the fact that nominal theme vowels do not surface before derivational suffixes is simply due to the absence of productive *stem-based* denominal constructions with consonant-initial suffixes (Pena 1999: 4337). The same is true of Italian (Peperkamp 1995: 210, Montermini 2003: note 3).

§3 For further arguments, see Bermúdez-Otero (2007a,b).

REFERENCES

- Alexiadou, Artemis & Gereon Müller (2005). Class features as probes. Ms, Universität Stuttgart & Universität Leipzig. Available at <http://www.uni-leipzig.de/~muellerg/mu55.pdf>
- Aronoff, Mark (1994). *Morphology by Itself*. Cambridge, MA: MIT Press.
- Baerman, Matthew (2005). Directionality and (un)natural classes in syncretism. *Language* **80**: 807-824.
- Bermúdez-Otero, Ricardo (2007a). Morphological structure and phonological domains in Spanish denominal derivation. In Fernando Martínez-Gil & Sonia Colina (eds), *Optimality-theoretic studies in Spanish phonology*, 278-311. Amsterdam: John Benjamins.
- Bermúdez-Otero, Ricardo (2007b). Spanish pseudoplurals: phonological cues in the acquisition of a syntax-morphology mismatch. In Matthew Baerman, Greville Corbett, Dunstan Brown & Andrew Hippisley (eds). *Deponency and morphological mismatches* (Proceedings of the British Academy 145). Oxford: Oxford University Press.
- Bermúdez-Otero, Ricardo (forthcoming). *Stratal Optimality Theory*. Oxford: Oxford University Press. See www.bermudez-otero.com/Stratal_Optimality_Theory.htm
- Bernstein, Judy (1993). *Topics in the syntax of nominal structure across Romance*. Doctoral dissertation, City University of New York.
- Blevins, James P. (2004). Inflection classes and economy. In Müller, Gunkel & Zifonun (eds), 41-85.
- Harris, James W. (1983). *Syllable structure and stress in Spanish: a nonlinear analysis*. Cambridge, MA: MIT Press.
- Harris, James W. (1985). Spanish word markers. In Frank H. Nuessel (ed) *Current issues in Hispanic phonology and morphology*. Bloomington, IA: Indiana University Linguistics Club. 34-54.
- Harris, James W. (1991). The exponence of gender in Spanish. *Linguistic Inquiry* **22**: 27-62.
- Harris, James W. (1992). The form classes of Spanish substantives. In Geert Booij & Jaap van Marle (eds) *Yearbook of Morphology 1991*. Dordrecht: Kluwer. 65-88.
- Harris, James W. (1994). The OCP, Prosodic Morphology, and Sonoran Spanish diminutives: a reply to Crowhurst. *Phonology* **11**: 179-190.
- Harris, James (1995). Projection and edge marking in the computation of stress in Spanish. In John A. Goldsmith (ed) *The handbook of phonological theory*. Oxford: Blackwell. 867-887.
- Harris, James W. (1996). The syntax and morphology of class marker suppression in Spanish. In Karen Zagona (ed) *Grammatical theory and Romance languages: selected papers from the 25th Linguistic Symposium of Romance Languages (LSRL XXV), Seattle, 2-4 March 1995*. Amsterdam: John Benjamins. 99-122.
- Harris, James W. (1997). There is no imperative paradigm in Spanish. In Fernando Martínez-Gil & Alfonso Morales-Front (eds) *Issues in the phonology and morphology of the major Iberian languages*. Washington DC: Georgetown University Press. 537-557.

- Harris, James W. (1999). Nasal depalatalization *no*, morphological wellformedness *sí*; the structure of Spanish word classes. *MIT Working Papers in Linguistics* 33: 47-82.
- Montermini, F. (2003). "Appunti sulla cancellazione di vocale in derivazione." In *Scritti di morfologia in onore di Sergio Scalise in occasione del suo 60° compleanno*. A. Bisetto, C. Iacobini, A.M. Thornton (eds), 171-188. Roma: Caissa Italia.
- Müller, Gereon (2004). On decomposing inflection class features: syncretism in Russian noun inflection. In Müller, Gunkel & Zifonun (eds), 189-227.
- Müller, Gereon, Lutz Gunkel & Gisela Zifonun (eds) (2004). *Explorations in nominal inflection*. Berlin: Mouton de Gruyter.
- Oltra-Masuet, Isabel (1999). On the constituent structure of Catalan verbs. *MIT Working Papers in Linguistics* 33: 279-322.
- Pena, J. (1999). "Partes de la morfología. Las unidades del análisis morfológico." In *Gramática descriptiva de la lengua española*, I. Bosque and V. Demonte (eds), 4305-4366. Madrid: Espasa Calpe.
- Peperkamp, S. (1995). "Prosodic constraints in the derivational morphology of Italian." In *Yearbook of Morphology 1994*, G. Booij and J. van Marle (eds), 207-244. Dordrecht: Kluwer.
- Wunderlich, Dieter (2003). A minimalist view on inflectional paradigms: the expression of person and number in subjects and objects. Paper presented at the Mannheim Workshop on Inflectional Paradigms, 24 May 2003. Written version available at <http://user.phil-fak.uni-duesseldorf.de/~wdl/>
- Trommer, Jochen (2005). A feature-geometric approach to Amharic verb classes. Ms, Universität Leipzig. Abstract available at <http://www.ling.uni-osnabrueck.de/trommer/amharic.html>

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