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Affective Suffixes in Spanish: evidence for morphological generalizations*

Paloma G, Bellido University of Massachusetts/Amherst

0. Introduction

This paper presents direct evidence for the need of four distinct morphological vocalic classes or declensions and one morphological consonental class or plurality, in the Grammar of Spanish. It also provides indirect evidence for the postulation of three morphological associations as a whole between gender and declension and number and plurality in that language. Both claims are based on the behavior of a large set of Affective Suffixes (henceforth "AS" (see (4)) which recursively modify Nouns, Adjectives and Adverbs. Evidence is taken from Gonzalez Ollé 1962 for medieval Castillian, Gooch 1967 for modern Spanish, Nañez Fernández 1973 for IX-XXth century peninsular Spanish and Alberto Rivas (personal communication) for modern Argentine.

Certain facts about plurals and stress in Spanish (treated by Harris 1969, 1978, Saltarelli 1970) are discussed under a morphological perspective.

*I would like to thank Dan Khan, Lisa Selkirk, Alberto Rivas, Juan Zamora, and Edwin Williams for their help in discussing a more extensive version of this paper which spells out the lexicon and the set of rules for a fragment of Spanish Morphology. I am also grateful to Emmon Bach, Wynn Chao, Panit Chotibut, Elisabet Engdahl, Marianne Phinney, Janet Randall and Mark Stein for their suggestions in the 3rd year seminar at UMass (Fall 78). and to people in the Spanish Dept. at UMass, especially Santi Tejerina, who have been my informants; their patience is appreciated. All errors in this paper are mine.

1.0 The insertion hypothesis

Consider the three following sets of pairs (la), (lb) and (lc),

1a.	BASE níño níña luégo ahóra	DIMINUT niñíto niñíta lueguíto ahoríta	'boy' 'girl' 'later' 'now'	_	BASE papel isaje convoy sofa	DIMINUT papelito paisajito convoyito sofacito	'paper' 'landscape' 'convoy' 'sofa'
		с,	BASE mápa máno	DIMINUT mapito manita	'map' 'had'		

Clearly, a rule of <u>fit</u> insertion on the left of the vowels <u>o</u> or <u>a</u> would not explain (1b) since such vowels are not in the base. Neither (1c) would be explained since the vowel of the diminutive form is not the vowel of the base. Therefore, the insertion hypothesis is descriptively weak since it only explains (1a).

2,0 The spelling hypothesis

In (1) the Insertion hypothesis was missing a generalization: the gender (henceforth "G") and number (henceforth "N") of Nouns and Adjectives is preserved in its suffixed couterpart since both the base and its suffixed form allow the same set of syntactic modifiers; (cf. 2a.a' and 2b.b'). Adverbs are not inflected for G or N.

$2a \left\{ \begin{bmatrix} N: -P \\ G: -F \\ G: +F \\ N: -P \end{bmatrix} e1 \right\} h \delta m b r e$	'the man'	b $\left\{ \begin{bmatrix} N:-P\\G:+F \end{bmatrix}$ la mujér $\begin{bmatrix} G:-F\\N:-P \end{bmatrix}$ *el +F	'the woman'
a' $\left\{ \begin{array}{c} e1 \\ *1a \end{array} \right\}$ hombrecito	DIMINUT,	b' $\left\{ \begin{array}{c} 1a \\ *e1 \end{array} \right\}$ mujercita +F	DIMINUT.

It would be fairly simple to state a rule insuring that if the base (Noun, Adjective or Adverb) contains G and N, its suffixed form also contains the same features. A later spelling rule would add an o or an <u>a</u> to the derived form according to whether G is NONFEMININE (-F,OF) or FEMININE (+F) respectively, and an <u>S</u> if N is PLURAL (+P). Unstressed final vowels and <u>S</u> would be deleted from the base. This treatment would have the advantage of reflecting a generalization about Spanish noticed some time ago by grammarians (RAC p. 177-8). Most of the words that have gender i) if they end in <u>a</u>, they are Feminine; ii) if in <u>o</u> they are masculine; iii) if they have plural they end in <u>s</u>. However the spelling hypothesis leaves unexplained the three sets of examples in (3).

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G: -F ahóra G: OF	ño, <u>DIMINUT</u> 'boy' -F , ahorita 'now' OF	b. la G:	fóto, fotíto 'photo' +F +F
el dí	a, diit <u>a</u> 'day'		
G: -F	-F		
		DIMINUT	
	c. parágüas,	paragüítas	'umbrella'
	N: -P	P	
	apénas, N: OP	apeníta <u>s</u> OP	'hardly'

In (3a) NONFEMININE suffixed forms end in <u>a</u> or do not end in vowels at all, in (3b) FEMININE suffixed forms end in <u>o</u>, and in (3c) NONPLURAL suffixed forms end in <u>s</u>. Clearly, the spelling hypothesis is also inadequate.

3.0. Capturing generalizations:

3.1. <u>AS are morphologically independent modifier words</u>. If we look at the set of AS in (4) we notice i) that not all <u>a</u> endings have an <u>o</u> ending counterpart (see the retangular boxes) ii) but that all members in each left column are well formed endings in the suffixed form of a NONFEMININE word like <u>el hombre</u> 'man' and also that all members in each right column are the well formed endings in the suffixed form of a FEMININE word like <u>la mujer</u> 'woman' and finally that no member in each left column can occur with 'woman' or members in each right column with 'man'.

4.	Diminutives	Augmentatives	Pejoratives
	-ito, -ita	-ázo, -áza	-éjo,-éja
	-ico, -ica	- ón, -óna)	-uélo,-uéla
	-íllo, -ílla	·····	-éte, - éta
	-ín , -ína		het man and a second second

This suggests that AS are classified in different genders, like the determiner is in Spanish. We also notice in (4) that the set of possible vocalic endings: $\underline{a}, \underline{o}, \underline{e}, \underline{-}$, is also found in basic Nouns, Adjectives and Adverbs.

5.	AS	-it a	-ít o	-ét e	-ón
	ADJ	budist a	rój o	vérd e	marrón —
	ADV	ahór <u>a</u>	luég o	frént e	detrás _
	N	níñ <u>a</u>	níñ o	hómbr <u>e</u>	mujér _

Thus if we treat AS like morphologically independent words, the absence of vocalic endings in suffixed forms like <u>miñin</u> in (3a) is accounted for in the same way as we account for nonvocalic endings in the other morphologically independent forms in (5), by associating a value of Gender to the nonvocalic endings.

Moreover, because of AS's G and N agreement dependency we capture the generalization that AS behave in the morphology like <u>modifiers</u> in the syntax in that in order to be well formed meaningful expressions they have to be combined with other independent words with which they may agree in Gender and Number. In categorical terms, the combinatory dependency for Adjectives is CN/CN and for AS X/X where X=Noun, Adjective and Adverb.

3.2. The inheritance principle: evidence for morphological associations and classes of endings.

A survey to the relationship between the G or N of each left side word in (3) (except <u>niño</u>) and its ending indicates that they violate the following three morphological generalizations:

- 6. a. Words containing Gender and ending in <u>a</u> (1st Declension) are interpreted as FEMININE.
 - b. Words containing Gender and ending in <u>o</u> (2nd Declension) are interpreted as NONFEMININE.
 - c. Words containing Number and ending in <u>s</u> (1st Plurality) are interpreted as PLURAL.

If we assume that just in those three cases of violation AS inherit the endings of their bases, we can account successfully for both the nonviolation cases (imposition by the suffix of its ending: (1), (2a'b') and $\underline{\text{ninin}}$ in(3a))and the violation cases (inheritance by the suffix of the endings of the base: (3) except $\underline{\text{ninin}}^1$. This treatment provides direct evidence for the existence of the 1st (a) and 2nd (o) Declensions and the 1st Plurality (s) since they are objects of morphological operations. It also provides indirect evidence for the postulation of three morphological associations since when those associations are not found in the base, AS behave differently.

3.3. The attachment requirements: evidence for the 3rd and 4th Declensions:

Only (7a) below requires c or ec between the base and the AS.

, 7 a	el húle	DIMINUT	'plastic'	DIMINUT
<i>1</i> a	er nure		'prastic'	b el pálo palíto 'stick'
		*huleīto		≯ palo i to
	la cól	col <u>ec</u> íta	'cabbage'	la cóla colita 'tail'
		*coleita		★colaita

Clearly the extra sounds in (7a) and their absence or the absence of the 1st and 2nd Declension in the Diminutive forms of (7b) are not conditions required by constraints on syllable combinations in Spanish since combinations of ei, oi or ai are possible.

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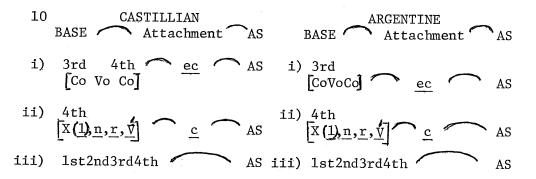
8a reida 'laughter' b oido 'ear' caida 'fall'

Neither the extra sound <u>c</u> in (9) is required by syllable timing patterns, but on the contrary, such an insertion breaks the preferable syllable timing pattern in (9b), considered to be phonologically and statistically well supported for Spanish.²

9a el solár solarcito b *solarito 'lot' cvcvccvdv cvcvcvv

Therefore, we have to conclude that the mentioned attachment requirements are due to facts outside the phonology and prosody of Spanish.

If we look at the possible reasons that might trigger the insertion we observe that the presence or absence of the ending <u>e</u>, 3rd and 4th Declensions respectively, gives the following results in the Spanish of Castilla and Argentina.



From the dialect of Argentina it follows that the 3rd D. does constitute an independent morphological class in the system of attachments. In both dialects the 4th D. constitutes also an independent morphological class. It is worth notice that the set of endings that constitute the 4th D. includes all consonants and stressed vowels, therefore no phonological natural class can explain adequately this fact.

In conclusion, the attachment requirements provide direct evidence in the morphology of Spanish for two distinct Declensions 3rd: \underline{e} and 4th: _.

4.0. Plurals

The presence of \underline{e} in (11b,c) for the plural forms has been treated in two ways: as an epenthesis to explain the absence of final word clusters in Spanish (Saltarelli 1970) or as an underlying \underline{e} which is

deleted under certain conditions at the end of a word (Harris 1969).

11a	níño	niños	Ъ	tráje	trájes	с	cól a	cóles	
	boy	PLUR		dress	PLUR		cabbage	PLUR	

The epenthesis hypothesis does not explain (12) since the insertion of e does not solve here a word final cluster case.

12	sofá	sofáes	zulü	zulúes	rubi	rubies
	sofa	PLUR	zulü	PLUR		PLUR

The underlying hypothesis presents a problem for explaining, on phonological grounds, the epenthesis of <u>e</u> in (12). There is no explanation in principle why $\begin{vmatrix} +cor \\ -ant \end{vmatrix}$

that deletion in some cases and not in others (13), or why +cor 1 -ant 0

has to be grouped with stressed vowels to explain both (12) and (13) when they do not constitute a natural phonological class,

13	mál	máles	hüle	hūles
	bién	biénes	péine	p ế ínes
	~	carcájes buéves	0 5	garájes
	buếy	bueyes	muelle	muélles

Neither do the hypotheses explain there dialects in which s is deleted at the end of words(most of native Spanish speakers in the world). The epenthesis hypothesis would have to order the rule before sdeletion, and the apocope hypothesis would have to specify that the deletion only occurs in singular but not in plural.

If we compare the left side environment where <u>e</u> deletion or <u>e</u> epenthesis would have to apply and the environment where <u>c</u> attachment occurs in (10ii) we see that in both cases the bases where <u>e</u> or <u>c</u> is attached end in non phonological natural classes: $\begin{bmatrix} + \cos l & and \\ -ant & 0 \end{bmatrix}$

vowel, corresponding to a subset of the 4thD.We might deduce from this observation that the occurence of e may very well be an attachment requirement of the plurality spelling in 4th Declension words (see Appendix: spelling operations).

5.0. Stress

5.1. As a general fact of Spanish the stress of every compound morphological word falls on the right suffix iff the suffix has stress of its own. Thus in (14a'b') we have two different output categories N and A with identical bases.

14a
$$\begin{bmatrix} evangéli \\ N \end{bmatrix}$$
 + $\begin{bmatrix} ico \end{bmatrix}$ a' $\begin{bmatrix} evangeli \\ M \end{bmatrix}$ $\begin{bmatrix} n/N \end{bmatrix}$ 'gospel'
b $\begin{bmatrix} evangéli \\ N \end{bmatrix}$ + $\begin{bmatrix} ico \end{bmatrix}$ A/N b' $\begin{bmatrix} evangéli \\ M \end{bmatrix}$ $\begin{bmatrix} nico \end{bmatrix}$ 'evangical'

The stress in (14a') is on the suffix since the suffix [fco] N/ $_{\rm N}$ has stress of its own. The stress is (14b') is on the base since the suffix [ico] A/N has no stress of its own (Sole 1966). If stress is given in the lexicon we could account for (14) by using the following generalization.

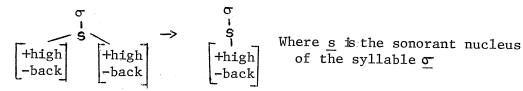
Prominent stress regulation for compositional rules 15

let x, y be any category If $\alpha \in B_x^*$ and $\beta \in S_y^*/_x$ and is [[+stress], W] then $m_{fi}(\alpha, \beta) \in B_y^*$ where $m_{fi}(\alpha, \beta) = \langle \begin{bmatrix} \alpha & \beta \\ [-stress] \end{bmatrix}$, $\begin{bmatrix} [+stress] \\ [+stress] \end{bmatrix}$, $\begin{bmatrix} W \end{bmatrix} \rangle$

Stress assignment on the lines of Harris 1969 given at the word level would have to block the assignment in (14b) in some ad hoc way (probably positing different boundaries or giving different status to the high vowels of the suffixes in (14)).

5.2. The deletion of high vowels in (14) has been explained by a rule like in (16) (Harris 78 example (25)).

16 Symmetrical high vowel deletion



If stress is not given in the lexicon there is no explanation why there should by any restriction of syllable reduction in (17b,c) but not in (17a)

iglésia iglesiíta b. romería romeriíta 'church' *iglesiíta 'feast' *romeriíta c rubi Trubiícol. 17a c rubi [rubiico]_A 'ruby'*rubiico

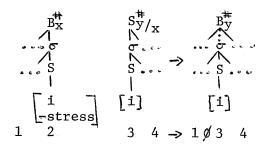
If both i's are underlying in the same syllable and (16) applies before or after stress assignment, there is no explanation either why only (17a) should be deleted.

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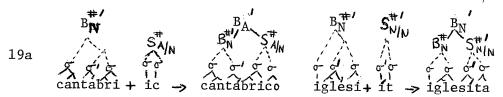
8

If stress is given in the lexicon we could account for (17) by using the following generalization

18 tentative



Note that if there is a consonant or a permissible syllable initial cluster to the left of the unstressed \underline{i} , they can become part of the syllable of the suffix,



We can assume that (18) is independently necessary since the same high deletion between prefixes and their bases or between words does not occur obligatorily, while in (17a) it does occur obligatorily.

20	а	anti-intimo	antintimo	(only	very	fast	speech)	'anti
	Ъ	Pili h i ja	Pil i ja	21		**	11	intimate' 'Pili daughter'

5.3. Finally if stress is given in the lexicon and not after the morphological operations have applied we can account for the differences in plurality spelling and affective suffixation that for instance ropa has, vs sofa, solely by means of their differences in stress.

Summarizing, we have given three arguments for suggesting that stress assignment should be given in the lexicon and not at the output of morphological rules. It has been also suggested that restrictions on syllable reduction can be imposed in a natural way at the time the compositional operations of the morphology apply.

APPENDIX: FRAGMENT³

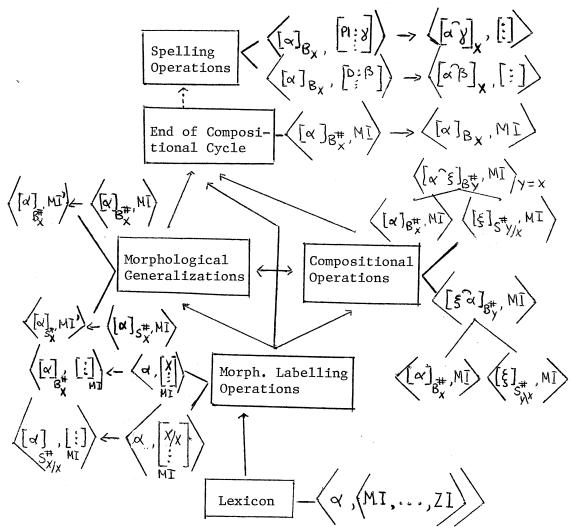
i) <u>Lexicon</u>. Is probably a pair whose first member is a string of phonemic matrices or segments and whose second member is an n-tuple sequence of independent sets of linguistic information.

In the fragment for purposes of simplicity we have been operating with only one set of linguistic information, assuming that the other linguistic information is present throughout the derivation.

- ii) Morphological labelling operations; They label the first pair according to whether the string is a basic category or base, or a dependent category or functor. They mark the labelling # to indicate, here, that the string belongs to morphological category (i.e. they cannot form phrases.)
- iii) <u>Morphological Generalizations</u>, They associate Gender to Decl. and Number to Plurality capturing the generalizations that Nouns, Adjectives, Adverbs and AS have with respect to those morphological features.
- iv) <u>Compositional operations</u>. They form a base, or complete meaningful expression, out of another base or complete meaningful expression and a functor, or incomplete meaningful expression. There are also subfunctions of attachment or inheritance of Decl. and Plurality associated with the compositonal main function.
- v) End of compositional cycle. It erases the morphological category marking iff the string is a base.
- vi) <u>Spelling operations</u>. They attach the phonemes of D and Pl in MI to the base, The plurality spelling has associated to it a subfunction.

MORPHOLOGICAL COMPONENT FOR THE FRAGMENT

(G. Bellido 78)

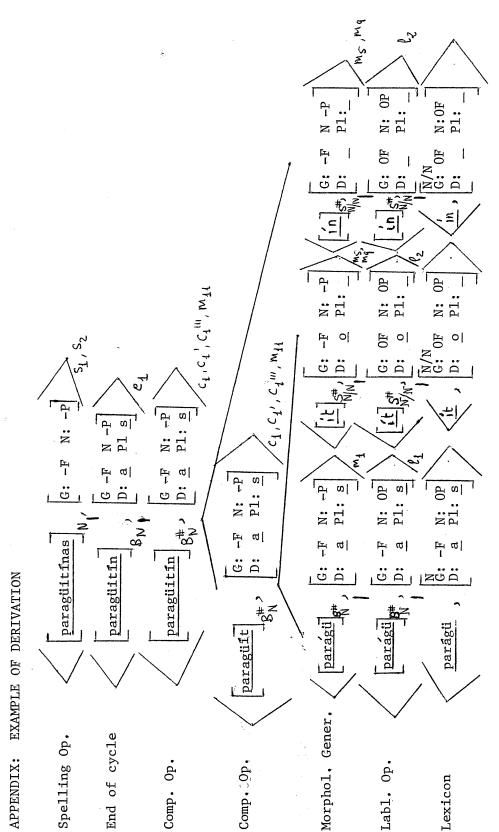


 ξ, α =String of Spanish phonemes with probably stressed features. MI=Morphological Information

X= N, A, Av ; X/X = N/N, A/A, Av/Av D: (3, where (3= 0, a, e, , G: (3, where (5= 0F, -F, +F) MI: PL: γ , where $\gamma = \underline{s}$, __, N: ζ , Where $\zeta = oP$, -P, +P

÷.,

APPENDIX:



Footnotes

1. Not all dialects and idiolects have the same words in the set of violation cases:

i)	la máno +F	<u>imposition</u> manita +F	<u>inheritance</u> maníto +F
ii)	el mápa -F	mapíto -F Dialect A	mapíta -F Dialect B

- 2. Hutchison 1974 argues for a sandhi rule in Spanish which is supported by the statistical study of Navarro Tomás (1968) where cv is 58.45% compared to ccv 3.31%.
- 3. In G. Bellido 1978 there is an explicit spelling and discussion of the lexicon and the operations needed in (ii-vi),

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