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Author(s)	Philip Spaelti
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# Some Phonological and Morphological Patterns in the Latin Noun Declension System\*

Philip Spaelti

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## Abstract

Latin nouns are traditionally grouped into declension classes. This classification creates an arbitrary linguistic category with no universal validity. This paper investigates the Latin noun system, and argues that the patterns are better captured by referring directly to independently motivated phonological and morphological categories.

## 1. Outline of the problem

Latin nouns change their form depending upon their case and number, a system that is known as declension. The complications of this system have led traditional treatments to group nouns together into so-called DECLENSION CLASSES whose sole purpose is to describe the appropriate forms of the noun. As such declension classes are ad hoc features, which have no independent motivation outside of the language and system for which they were created. The strong position is that an optimal account of the properties of Latin case endings should use only categories and features needed in the phonology and syntax of Latin. (See also Emonds, 2000).

If declension classes had independent reality we should well expect a fairly random distribution of phonological stem shapes among the classes. In fact as has been long recognized in certain teaching traditions (see e.g. the German tradition as exemplified by Stock (1971) and Pertsch (1971)), the declension classes correspond in a fairly regular fashion to certain phonological endings. The array of such endings covers exactly the entire range of possibilities. Arranged in order of descending sonority, these are: *a, o, e, u, i* and the consonants. Here it will be argued that direct reference to the phonological properties of the stem final vowel leads to a more insightful account of the distribution and realization of different forms than the indirect mediation via declension classes.

In addition to the phonological categories relevant to the description there are also other independently motivated categories that play a role; in particular gender.

## 2. Gender and the Latin Vowel System

Latin nouns exhibit a gender agreement system with three genders, which line up with the declension classes in intricate ways. However the one place where the gender system most

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\*This paper owes its origin to certain ideas by Joe Emonds. It presents some preliminary results from joint work which will ultimately place these ideas in the larger context that they more properly belong. I would like to express my sincere thanks to Joe for his generous contributions to this paper. All errors are mine.

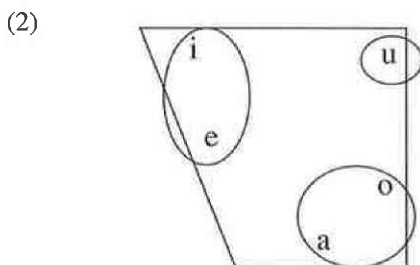
directly interacts with the declension system, is in the case of neuter nouns. Neuter nouns show certain common patterns which systematically cut across the declension classes, and thus undermine them. While some aspects of the special patterning of neuters are usually acknowledged in any presentation of the declension classes, they are usually presented as supra-grammatical fact.

The most obvious way in which neuters stand apart from animate gender nouns is that no matter which putative declension class they are assigned to, they differ from other nouns of the same class in that they always have the same form for both the nominative and the accusative. Moreover neuter nouns share the same nominative/accusative forms across declension classes.

(1)	Neuter suffixes	Singular	Plural
	Nominative/Accusative	∅ (-m)	-a

There are however further aspects that can only be explained by reference to the category neuter. One such point is that the distribution of neuter nouns is defective. As pointed out above, Latin nouns generally include stems which end in all of the possible sounds. However neuter nouns are attested for only three of the five possible vowels in addition to the consonants. The attested shapes are *-i*, *-u*, and *-o*, while neuters ending in *-a* or *-e* do not occur. This is not a haphazard fact but rather reflects a more basic 3 vowel system underneath the more overt 5 vowel system. In the Latin noun system *i/e* and *o/a* often pattern together as will be explained in more detail below, but one example of this can be seen again with the neuter nouns, where the *-i* stems in fact show a final *-e* in the nominative/accusative singular. Thus we have *maria* 'sea' in the nom/acc. plural, but *marē* in the singular.

We can present the relationships in the system as follows:



This 3-vowel system can also be seen in the distribution of animate genders. While nouns of animate gender can have all five vowels as possible stem endings, the distribution of the two genders, masculine and feminine, is not random across these vowels. The general rule is that the front/unround vowels *-i*, *-e*, *-a* are feminine, while the back/round vowels *-o* and *-u* are masculine. There are occasional irregulars, but they can mostly be explained by natural gender, e.g. *nauta* 'sailor' which ends in feminine *-a*, but is 'naturally' masculine, or *quercus* 'oak' whose stem ends in masculine *-u*, but is 'naturally' feminine, as trees are generally feminine in Latin, etc.

The point that is relevant to the current discussion is that we can see a system in which the five phonemic vowels form certain systematic oppositions: the high vowels form a front/back opposition *i~e* versus *u*, while the low vowels *a* versus *o* do likewise.

Returning once more to the neuters there is one more aspect where we see unitary behavior which cuts across the declension classes. The defective distribution of neuters has as a result that the neuters have overwhelmingly levelled the oblique form losing the distinction between the ablative and the dative singular. One of the few remaining places where the distinction was

still expressed was in the case of the *-u* stem neuters. However the neuter *u*-stems lost this distinction already in early Latin: with the datives *cornuī* ‘horn’ and *genuī* ‘knee’ becoming *cornū* and *genū* respectively making them identical to the ablative. Of course with only few examples—*cornu*, and *genu* being perhaps the only members of this class—this class is an obvious case for levelling. However what goes completely unexplained in a declension class analysis is the direction of levelling. If declension class is the paramount category we would expect the *u*-stems to be exerting the levelling pressure or, at least, that the *u*-stems would level as a group. But levelling is limited to the neuters bringing the *u*-stem neuters into line with the *i*-stem, and *o*-stem neuters.

### 3. Phonological Conditioning of Nominal Case Endings

Latin noun stems can end in any of the phonemes of the language. Taking into account our earlier proposal for the organization of these segments they fall into classes which can be arranged according to sonority.

(3) 

a~o	u, e~i	consonants
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One peculiarity to note about this distribution is that the nouns ending in *-e* always have a long stem final vowel, that is they are actually *-ē*.

Now to the extent that stems take different endings the claim being made here is that the conditioning of such endings is best explained with reference to the phonological quality rather than any arbitrary notion of declension class. In fact in some cases there is no conditioning at all, that is, all stems take the same ending. A case in point is the accusative singular where all (animate gender) nouns have the ending *-m*. Conversely this means that the stem for any given noun is simply the accusative, minus the final *-m*, except that:

- A. *-o* stems change to *-u*
- B. consonant stems have an epenthetic vowel *e*

The change of stem final *-o* to *-u* in an unstressed closed syllable is a general rule of Latin. Aside from the in the accusative singular, it is also seen in the nominative singular of *-o* stems, i.e., the ‘*-us* form’ e.g. *dominus* ‘lord’ < *domino-s*, as well as in certain typical alternations such as *corpus* ~ *corpore*. This rule has also caused historic changes which can be seen, for example, in the genitive plural, which has become *-um* in classical Latin. The original (archaic) form of the ending is *-om*. Thus we see short ‘*o*’ has been eliminated in closed, unstressed syllables, with only one notable exception: the common ending *-or*. In other contexts short *o* is avoided, such as before tautosyllabic *-n* where the vowel is lengthened, and the nasal either weakened or lost completely; e.g. *orātiō* ‘speech’, cf. *orātiōnem*. Some foreign borrowings reintroduced final *-n*, though the preceding vowel is still lengthened (e.g. *Babylōn*). Taken together, the data suggests clearly that Latin had a reduced vowel system in unstressed position, at least in the shortened vowel context of closed syllables, with the full 5-vowel system reduced to four or perhaps three vowels. A full analysis of this phenomenon would take us far afield (see relevant analyses in the work of Padgett e.g. Padgett (2003), as well as Crosswhite (2001).

Epenthesis of *e* between a consonant and a word final *-m* is not further surprising, but follows straightforwardly from Latin phonotactics. In fact it seems not at all unlikely that this epenthetic vowel could be a centralized vowel, rather than a full-fledged *e*. Thus we can assume that the accusatives *honōrem* ‘honor’ and *lēgem* ‘law’ derive from *honōr-m* and *lēg-m* respectively.

Parallel to the accusative singular is the nominative singular which has the ending *-s*. Nominative *-s* seems to be missing from certain stems. In this case again the phenomenon does not line up with any particular declension class, except in the trivial sense that it is missing after stems ending in *-a* (i.e., the '1st class'). However in the so-called 3rd class *-s* is missing in a way that might seem more haphazard. In fact the cases where *-s* is absent can only be captured phonologically. The generalization is that *-s* is missing after coronal sonorants, including deleted *-n* (e.g., *orātiō* < *orātiōn-s*), while it causes non-sonorant coronals to delete e.g., *quies* < *quiet-s*, *fons* < *font-s*, *ars* < *art-s*, *lapis* < *lapid-s*, etc. In other well known cases it is merely obscured by the spelling. So we have *lex*, actually *lecs* < *leg-s* with voicing assimilation, *vox* actually *voc-s*. Both consonant deletion and spelling obscure *nox* actually *nocs* < *noct-s*.

In a further set of cases the *-s* causes epenthesis; typically so in many of the cases traditionally called 'mixed' declension. In particular stems ending in fricatives ('spirants') or the glide *-w* (which is represented as [v] in the spelling), such as *classis* < *class-s*, and *clāvis* < *clāv-s*, but also quite systematically in stems ending in *sC* such as *hostis*, *testis*, *fascis*, *piscis*. A particularly interesting case is that of stems like *hostis*. While according to the above generalization we might have expected final *-t* to delete in *host-s* the resulting *hos-s* would be no better. Thus epenthesis is preferred and the environment for deletion of *t* disappears. This is illustrated by the following tableau, where the constraints which account for Latin syllable structure have been abbreviated as 'Syll-struct'.

(4)

	Syll-struct	Dep-IO	Max-IO
a. <i>host-s</i>	*!		
b. <i>hos-s</i>	*!		*
c. <i>hosis</i>		*	*!
d. <i>h<sup>h</sup>ostis</i>		*	

Similarly *pisc-s* leads to an unacceptable cluster which is resolved by epenthesis. Traditional declension class treatments—Stock (1971) calls such cases 'gleichsilbig'—leave it a mystery why some nouns in *-is*, such as *turris* 'tower' are *-i* stems, while others, seemingly inexplicably, have the same endings as the consonant stems. Under the proposal being made here nouns such as *host-* and *pisc-* are consonant stems, and unsurprisingly so, since they end in a consonant.

Thus we see that while the actual realization varies in a rather intricate manner, the form of the nominative affix is of a regularity which goes entirely unelucidated by the declension class analysis.

In other cases too epenthesis has served to obscure what are undoubtedly more regular paradigms. For instance a fairly obvious case is that of the nouns ending in *-r* which fall into two groups. One group represented by such nouns as *agger* 'rampart' or *mulier* 'wife' have an inherent vowel as part of the stem, while others such as *frater* 'brother' or *imber* 'rain' are properly understood as ending in a consonant cluster; thus *fratr* and *imbr* respectively. In these forms the apparent vowel 'e' represents most likely a spelling convention—as for example seen in modern English—to represent what is undoubtedly a syllabic 'r', or otherwise perhaps a more obviously overt epenthetic vowel which resolves an otherwise unacceptable word final cluster.

Accusative plurals are also constant across all nouns. In this case the suffix is again *-s*, but it is distinguished from the nominative singular because of a requirement that the stem that it attaches to must end in a long vowel. For vocalic stems this simply means that the final vowel is lengthened, but for the consonant final stems there is no vowel to lengthen. Thus such

cases again require epenthesis. However the source of epenthesis is a different one. While the several instances of epenthesis we have encountered so far are phonotactically motivated, and typically produce the least intrusive vowel available, in this case we have an instance of *morphologically conditioned epenthesis*. In epenthesis of this kind we typically expect a more salient vowel, typically one of higher sonority. Apparently the vowel used in such contexts in Latin is *e*.

Finally a very similar case is that of the singular oblique, the form typically called ablative. In this case too we see a lengthening of the final stem vowel. The proposal that I make here is that this is in fact an affix which consists of an empty vocalic mora without a quality specification. Adding this to a stem ending in a vowel will cause the stem final vowel to lengthen. Adding the same to a consonant final stem will again cause morphological epenthesis and thus result in a vowel *-e*.

The discussion of forms so far is summarized in (5). The traditional declension class names are given for reference.

(5)	stem ending	Nom sing	Acc sing	Abl. sing	Acc.pl	class
		-s	-m	+m	long V + s	
	-a stems	–	-am	-ā	-ās	I
	-o stems	-us	-um	-ō	-ōs	II
	-u stems	-us	-um	-ū	-ūs	IV
	-ē stems	-ēs	-em	-ē	-ēs	V
	-i stems	-is	-im	-ī	-īs	III
	C stems	-s	-em	-e	-ēs	III

If all case endings were constant across all nouns then the concept of declension class might never have arisen. Other cases are more complex, however the proposal being made here is that the distribution of alternate case markings is better explained by reference to categories other than a purely stipulative notion such as declension class. In the rest of this paper I would like to concentrate on certain cases, in which the conditioning is phonological. The categories that are relevant here are: quality, and length.

### 3.1 Quality

The important break among Latin nouns is between those nouns ending in the low vowels *a/o* and all the others. These two groups pattern differently in a number of ways. First of all there is the difference in the oblique plural.

(6)	oblique plural	-īs	replaces stem vowel for <i>-a/o</i> stems
		-(i)bus	all others

The parenthesis notation in (6) represents a segment which is only realized as prosodically called for, that is with consonant stems (see Emonds, 2000). For all others, i.e., *i*-stems, *u*-stems, and *ē*-stems the affix is *-bus*. However in the case of *u*-stems the final *-u* changes to *-i*, thus giving forms like *curribus* ‘chariot’ < *curru-bus*. Again this change seems to be a general requirement in Latin though of a rather specific kind. A form which has been affected permanently by this requirement is the form *optimus* ‘best’ < *optumus*. The requirement seems to be a dissimilation unrounding *u* in an unstressed syllable when followed by a labial + *u*.

In the case of *a/o*-stems however the affix is not *-bus*, but rather *-s* with however the special requirement that the stem end in a long *-ī*. In fact the length requirement on the plural stems of the *a/o*-stems seems to be a general requirement, which has independent validity, apart from

the oblique plural. It also sets the a/o-stems apart from the i- and u-stems, which do not have such a requirement. It can also be seen in exceptional lexemes which do not take the usual oblique plural forms. For example *dea* ‘goddess’ exceptionally takes the oblique plural suffix *-bus*, resulting in the form *deābus*. Despite the special plural ending the form still shows lengthening of the stem final vowel, as we expect from an a-stem.

### 3.2 Length

The length requirement on the plural stems of the a/o variety is seen also in the last case that will be discussed in this paper: namely the genitive plural. The basic form of the genitive plural suffix is:

- (7) genitive plural *-(r)um*

In this case the parenthesized segment has again a prosodically motivated realization, as it is expressed only after a long stem vowel. Thus it is realized after the a/o stems, which as already mentioned, have a length requirement in the plural. In addition it is also the realization after ē-stems, which have an inherently long vowel. The prosodic motivation for this realization is presumably the onset requirement; a desire to avoid hiatus. After short vowels and consonants the realization of *r* is not triggered, and the genitive plural suffix is *-um*. Thus we have forms such as *turrium* ‘towers (gen. pl.)’ < *turri-um*, *passuum* ‘double step (gen. pl.)’ < *passu-um*, or *lēgum* ‘law (gen. pl.)’ < *lēg-um*.

While the analysis of the genitive plural may seem satisfactory so far, this form is notorious for its variation. A first source of variation which concerns the a/o-stems, is that a number of these stems take the *-um* form instead. This seems to be a leftover older form: thus we have *amphorum* ‘amphoras’ instead of *amphorārum*, or *nummum* ‘coins’ and only rarely *nummōrum*. It should however be noted that the generalization concerning the occurrence of the *-rum* variant remains correct. If *-rum* forms occur they do so after a lengthened stem vowel, while *-um* forms do not. The analysis offered here holds that the older *-um* forms for a/o-stems predate the plural length requirement. Note that a declension class analysis has nothing useful to say about such variation.

A second source of variation for genitive plurals has to do with a variant of the *-um* form which takes the form *-ium*. The distribution of these forms does not seem to be entirely predictable, with many lexemes taking both variants, at least at different periods. As far as patterns of the variation can be mapped out, the primary distribution seems to be that the *-ium* form occurs primarily with those lexemes that show an epenthetic *-i* in the nominative singular such as *nāvis* ‘ship’ *nāvium* (gen.pl.) or *hostis* ‘guest’ *hostium* (gen.pl.), but also with other nouns ending in CC clusters such as *urb-* ‘city’ *urbium*, or *imbr-* ‘rain’ *imbrium*. Either way it should be pointed out that the declension classes are no help in predicting this variation, as it is entirely within what is traditionally labelled the 3rd class. On the contrary the description in terms of the phonological categories—nouns with a stem ending in a CC cluster—seems significantly more on target, than any that could be given in terms of declension classes.

## 4. Conclusion

This paper has reviewed the Latin declension system and extracted a number of generalization from the patterns. The primary goal was to show that describing the patterns in terms of independently motivated morphological and phonological categories leads to a more accurate and insightful analysis than one in terms of arbitrary categories such as declension class.

At this point there still is a considerable amount of work to be done in terms of properly formalizing these observations. What also remains to be done is to extend these observations with an eye toward the larger goal of removing such arbitrary categories entirely from the proper description of language. (See Emonds, 2000, Forthcoming).

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