Remarks and Replies

Latin Morphology: Another Look

Brian Joseph, Rex Wallace

Williams (1981) presents a theory of morphology that attempts to account for the order of affixal morphemes within a word. Williams is concerned in part with the observation that inflectional morphemes tend to occur outside of derivational morphemes, although he does not recognize an explicit categorial distinction between *inflectional* affixes and *derivational* affixes in order to achieve such a result.[1] Instead, he introduces a variety of constructs, including a theory of the paradigm and the notions "relatedness," "head," and "syntactic relevance," and through this overall approach to morphology he attempts to derive the ordering properties of affixes. As a by-product of his theory of the paradigm, he derives a set of predictions concerning the range of possible syncretism within a paradigm.

Williams's main testing ground for his theory of the paradigm and all that it encompasses—relatedness, head, syncretism, syntactic relevance, etc.—is Latin, specifically the Latin nominal and verbal systems. Various aspects of Williams's theory have already been criticized[2] (in our view, justifiably so); however, quite apart from these general theoretical problems, there are additional problems with the specifics of his analysis of Latin morphology that show his overall theory of morphology to be seriously flawed. Without a suitable demonstration of the utility of his theory and the various constructs it requires, there is no strong basis for accepting the theory as it stands.

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[1] Such a distinction is made in Structuralist grammars (e.g. Bloomfield (1933)) as well as more recent works (e.g. Anderson (1982), Zwicky and Pullum (1983)). We retain the traditional labels here for ease of exposition.

[2] See for example Lieber (1980), Strauss (1982), Joseph and Wallace (1982), Thomas-Flinders (1982), and Churma (1983). Also relevant is Sherwood (1983).

1. Theoretical Preliminaries: The Paradigm

Essential to Williams's analysis of the Latin noun and verb is his theory of the paradigm, which is itself based in part on two theoretical constructs he motivates: *relatedness* and *head*:

(1) a. *Head* (of a word): The right-hand member of a morphologically complex word is the head (p. 248).
b. *Related*: X is related to Y if Y is the result of removing the head of X (p. 260).

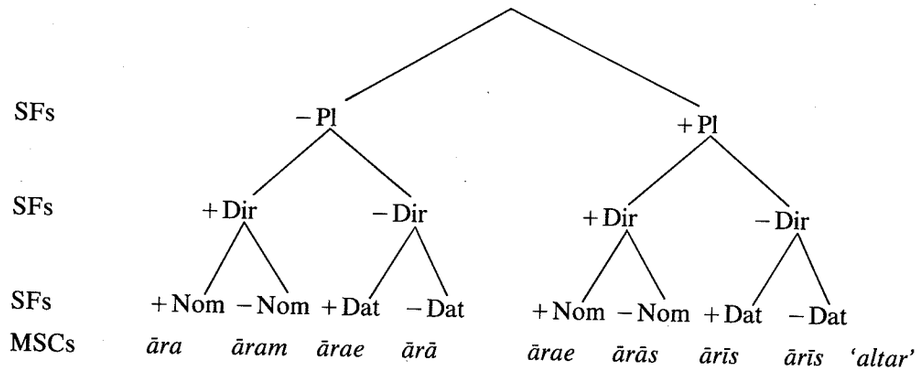
In Williams's theory, paradigms consist of both syntactic features (SFs) (for example, tense, case, person, or number) and morphosyntactic categories (MSCs) (that is, morphologically distinct forms that are "related" in Williams's sense of the term).

The SFs are hierarchically ranked so as to yield a syntactic matrix (SM) that is then filled with MSCs. The paradigm is therefore a constellation of related forms in which morphemes expressing syntactic features function as the heads of the related forms.

2. Paradigmatic Syncretism

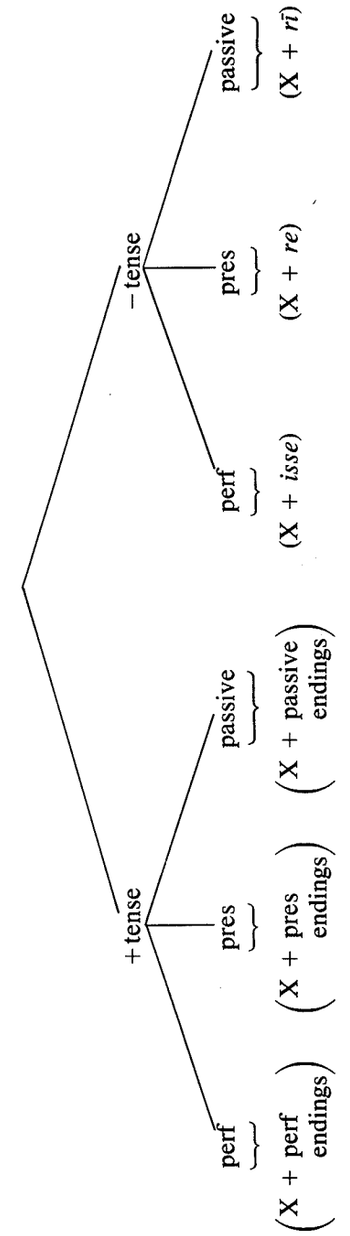
To account for syncretism in Latin nominal and verbal paradigms, Williams posits SFs and a ranking for these SFs so as to yield an appropriate SM. Table 1 displays Williams's detailed matrix for the Latin noun and table 2 his less detailed[3] one for the verb. These syntactic matrices specify the dimensions along which items are related independent of any pair of forms cited, so that in the case of substantives the SM is supradeclensional

Table 1. Syntactic matrix of Latin noun (after Williams (1981, 268))



[3] Williams's verbal matrix omits the imperative and subjunctive moods as well as the imperfect and future tenses. Moreover, his ternary division for the verb implies that the passive stem is in some way distinct from the active stem, an observation that the facts of Latin clearly do not warrant, for the present stem is the base for the addition of both active and passive personal endings, cf. *amā-mus* 'we love' ~ *amā-mur* 'we are loved'.

Table 2. Syntactic matrix of Latin verb (after Williams (1981, 269))



and in the case of verbs it is supraconjugational. This fact is formally expressed in terms of possibilities of paradigm-internal syncretism.

In particular, with regard to the noun, Williams claims (p. 268) that possibilities of case syncretism will be the same across declensions, and that only certain types of syncretism will occur; for example, with number identical, dative = ablative and nominative = accusative but nominative ≠ dative and nominative ≠ ablative, nor should there be any cross-number syncretisms (e.g. nominative plural = dative singular). This analysis and its predictions, however, encounter two major problems.

First, the hierarchical order of SFs that Williams assumes for the nominal SM is without any independent justification. In the description of the Latin noun he assumes that the SFs are to be ranked ±Plural > ±Direct > ±Nominative/±Dative. However, he does not offer any principles for such a ranking and thus it must ultimately be considered ad hoc. Moreover, the SF *case* is divided into the categories ±Direct, +Direct governing the nominative and accusative cases, −Direct governing the dative and ablative cases. But Williams again offers no substantive evidence for the division of case into binary features.[4] As a result this move must also be considered ad hoc. Nevertheless, the reason for Williams's ranking and intermediate SFs seems clear: any other arrangement would yield an SM in which it would be impossible to independently specify the dimensions along which nominal forms are related; yet, as noted above, such a specification is one of the key features of Williams's theory of the paradigm. Thus, the matrix can be made to "work" (more or less, but see below), but only by a "brute force" method of arranging features so as to make it work.

Second, the extent to which the matrix "works" is actually rather limited. Williams arbitrarily restricts his description to just a subset of the total range of cases and declensions in Latin. He assumes, wrongly, that Latin has 5 cases (it has at least 6 and possibly 7)[5] and 4 declensions (it has 5, with numerous subdivisions within those 5)[6] and then proceeds to base his analysis on 4 cases (nom., acc., dat., abl.) and three declensions (1, 2, 3). As it turns out, it is difficult to make the theory of the paradigm work when all cases and declensions are taken into consideration.[7] The predictions concerning case

[4] A binary analysis of SFs is not even a necessary feature in Williams's system, for he gives (p. 269) a ternary division for verbal forms, into passive, present, and perfect stems (see table 2).

[5] The six secure cases are nominative, genitive, accusative, dative, and ablative, as well as the vocative, although it is distinct from the nominative only for singular second declension masculine nouns; the one additional questionable case is the locative. Locatives are not widely enough attested to allow one to infer full productivity for this case/category; moreover, locatives, when they do occur, are formally distinct only for some third declension nouns (e.g. *rurī* 'in the country'). Thus, one can sympathize to some extent with Williams's decision to rule the vocative and locative out of consideration, but the decision is an arbitrary one, which he neither justifies nor even mentions.

[6] The grammars and handbooks of Latin divide the nominal system into five declensions. This division was instituted by the ancient grammarians (see Leumann, Hofmann, and Szantyr (1977, 256)). As any Latinist would readily admit, however, this division is somewhat arbitrary and does not accurately represent the diversity that exists within each declension. For example, the third declension alone has at least four subclasses (see Allen and Greenough (1903, 24–31)).

[7] As Williams himself recognizes with regard to (only) the genitive (pp. 268–269): "The genitive singular is something of a problem, since it is syncretic with the nominative plural in I and IIM and IV. It is impossible to express this syncretism in the theory outlined here, and it must thus be viewed as 'accidental' syncretism."

syncretism made by Williams's theory prove to be wrong not only within the limited set of data (4 cases, 4 declensions) he considers, but also within an expanded data set including the fifth declension and the genitive case.[8]

For example, in the fourth declension neuter *-ū*-stem nouns (e.g. *cornū* 'horn') the nominative singular (*cornū*) is identical with the dative and ablative singular (also *cornū*), a syncretism not predicted by Williams's theory. Similarly, in the first declension *-ā*-stem nouns (e.g. *āra* 'altar'), the nominative plural is identical with the dative singular (both *ārae*), and in a subclass of the third declension, the so-called third "mixed" type, the nominative singular (e.g. *nūbēs* 'cloud') is identical with the accusative plural (also *nūbēs*), both instances exhibiting the cross-number syncretism supposedly ruled out in Williams's schema.

Moreover, the addition of the genitive case introduces (besides the troublesome syncretisms Williams himself notes but dismisses as "accidental" (see footnote 7)) such mergers as genitive singular = accusative plural for first declension nouns with genitives in *-ās* (e.g. *familiās* 'of a household'). The addition of the fifth declension introduces still more unpredicted syncretisms such as genitive singular = nominative/accusative plural (e.g. *diēs* 'day'). The complete range of these syncretisms (excluding the locative and vocative) that falsify Williams's account is summarized in table 3 (p. 324).

Williams is less explicit about syncretism in the verb, but it is clear, to judge from his verbal syntactic matrix (see table 2), that his theory cannot account for syncretism in the Latin verb either. In particular, two forms of the 2sg passive ending in primary tenses are to be found, *-ris* and *-re*, the latter of which produces "tensed" forms that are syncretic with the "untensed" present active infinitive (as well as the rare 2sg passive imperative), for all the conjugations including irregular verbs. For example:

(2) a. *amā-ris* ~ *amā-re* 'you are loved' = *amā-re* 'to love' (cf. also *amā-re* 'be loved!')
b. *fer-ris* ~ *fer-re* 'you are carried' = *fer-re* 'to carry' (cf. also *fer-re* 'be carried!')

The variant ending *-re* is not at all rare;[9] it runs throughout the whole of the primary system, including the present indicative and subjunctive, imperfect indicative and subjunctive, and future indicative. Since this ending is well represented, the syncretism it causes is probably not to be treated as "accidental." Since this syncretism cuts across a major division, tensed vs. untensed, of the syntactic matrix tree, as well as personal ending and mood categories, it is not accounted for in Williams's system. Similarly, his

This statement is rather odd, given the fact that earlier (p. 267), Williams states that he "will ignore the genitive, which can be fit into the theory in a number of ways."

[8] Not to mention, of course, the additional problems that would arise if the vocative and locative cases were both taken seriously.

[9] The 2sg passive *-re* is the more frequent variant in the archaic period. By the Classical period, however, the variant *-ris* was preferred in the present indicative, whereas *-re* was preferred in the imperfect and future indicative and the subjunctive (see Ernout (1953, 122)).

Table 3. Examples of syncretism in Latin noun declensions

	Nom. Sg.	*Gen. Sg.*	*Dat. Sg.*	*Abl. Sg.*	*Nom. Pl.*	*Acc. Pl.*	*Gloss*
Declension 1		ārae	ārae		ārae		altar
		familiās[a]				familiās	household
Declension 2		hircī			hircī		he-goat
Declension 3	canis	canis					hound
	nūbēs[b]				nūbēs	nūbēs	cloud
Declension 4		manūs			manūs	manūs	hand
	cornū[c]	cornū	cornū	cornū			horn
Declension 5		spĕī	spēī				expectation
	diēs[d]	diē/diēs	diē	diē	diēs	diēs	day

[a] The genitive ending *-ās* was, in literary varieties of Latin during the age of Cicero, restricted to the noun *familia* when meaning 'household'. This ending is attested more frequently in the archaic period (for examples, see Ernout (1953, 19–20)).

[b] Third declension nouns like *nūbēs* 'cloud' that follow the "mixed" *i*-stem declensional pattern cannot be considered declensional aberrations. We have counted 33 nouns, in addition to *nūbēs*, that follow this declensional pattern (see Allen and Greenough (1903, 30)). Doubtless there are more.

[c] The singular of *-ū*-stem neuters like *cornū* 'horn' was indeclinable by the beginning of the imperial period (roughly the beginning of the reign of Augustus). The first attestation of a dative in *-ū* is found in Livy (Ernout (1953, 65)). Genitive singulars in *-ū* are found in Celsus (*floruit* A.D. 50) (*OLD*, 446).

[d] During the Ciceronian age there was a considerable amount of variation in the genitive singular of *diēs* 'day'. Aulus Gellius (*Att. Noct.* 1,1) notes that Caesar, in his book *Dē Analogiā*, advocated the use of a genitive singular *diē*. This form is also attested in Virgil (*Georgics* 1, 208). A genitive singular *diēs* is found in the *Annalēs* of Ennius (p. 413). Two additional genitives are found in Virgil: *diēī* (*Aen.* 9, 156) [diēī] and *diei* (*Aen.* 1, 636) [dyey] or possibly [dyī].

system cannot easily explain, if at all, the syncretism of the future perfect indicative active with the perfect subjunctive active in other than 1sg and 3pl forms.[10] For example:

(3) a. *dīxerit* 'he will have said' ~ *dīxerit* 'he might have said (subjunctive)'
b. *tulerimus* 'we will have carried' ~ *tulerimus* 'we might have carried (subjunctive)'

Thus, Williams's theory of the paradigm does not achieve what it is supposed to either for the noun or for the verb in Latin. With regard to the noun, no one ranking of features can yield the appropriate SM for all Latin nouns; moreover, contrary to Williams's predictions, case syncretism in Latin does indeed depend on declension, gender, and, in some instances, the particular subclass within a declension or individual lexical item in question. Similarly, with regard to the verb, syncretisms occur that Williams's theory of the paradigm cannot account for.

[10] Originally, the future perfect and the perfect subjunctive were distinguished by means of vowel length, short *i* (*-eri-*) in the future perfect, long *ī* (*-erī-*) in the perfect subjunctive. Traces of this distinction can be found in the archaic poets, e.g. Plautus *uēnerīmus* (*Bacch.*, 1132). This length distinction was neutralized by the Classical period; as a result the future perfect and perfect subjunctive were syncretic in all but the 1sg (see Ernout (1953, 218) for the 3pl).

3. Ordering of Morphemes and "Syntactic Relevance"

In Williams's framework there is no special rule for the introduction of inflectional affixes. As a result, Williams must have some explanation for the fact that inflectional affixes tend to be "outer," whereas derivational affixes tend to be "inner."[11] He accounts for the position of the rightmost inflectional morpheme in a word by means of the notion "syntactic relevance." Morphemes that bear "syntactically relevant" information must appear in ultimate head position in words, i.e. the rightmost position, so that the syntactically relevant feature can percolate up to the syntactic level (p. 264). In the Latin verb, for example, Williams claims (p. 264) that "tense"[12] is syntactically relevant "in that it determines the case of subjects." As a result, the personal endings of the Latin verb appear in ultimate head position, e.g. *dictābi-t* 'he will repeat'. The notion "syntactic relevance" only accounts for the position of the rightmost morpheme. The implication of this notion is that there will be only one syntactically relevant morph per word, inasmuch as only one morph can be rightmost in the word. A serious problem arises, however, since within both the Latin noun and the Latin verb, more than one morph can in fact be syntactically relevant.

In the noun, the rightmost morpheme is the case ending, which in Williams's system (p. 264) is syntactically relevant. However, the gender of a Latin noun is often determined by a prefinal (derivational) morpheme; for example, all abstract nouns in *-tāt-*, such as the nominative *pie-tās* (from underlying */pietāts/*) (genitive *pietātis*) 'dutifulness', are feminine and all nouns in *-ētum*, such as *rosētum* 'rose garden' (derived from feminine *rosa* 'rose'), are neuter, and so on.[13] Gender is a syntactically relevant feature in that it determines the form of adjectives dependent on the noun. For example:

(4) a. prīma pietās . . . nōminātur
first/fem dutifulness is mentioned
'dutifulness is mentioned first'
(Cicero *Topica* 23, 90)

b. *prīmus pietās . . .
first/masc

Thus, gender is a feature that in Williams's system must be able to percolate upward to the node dominating the word in question, and therefore it would be predicted to be rightmost; however, such morphemes are never in ultimate head position.

Similarly, regarding the verb, there are constructions in which the occurrence of a subjunctive mood form higher up in a sentence causes a verb that would otherwise be indicative to instead be subjunctive. This is the phenomenon known as "subjunctive by

[11] The appearance of affixes to the right of a root morpheme is accounted for by Williams's affixation rule (p. 246).

[12] We suspect that *finiteness* is a better term, since the personal endings do not themselves indicate tense in the sense of temporality.

[13] See Allen and Greenough (1903, 140ff.) for details.

attraction'' (see Hale and Buck, section 539), as in the following example:

(5) cum ita balbus esset, ut eius ipsius artis cuī
since so stammering was/3sg that that-very-art/gen which
studēret prīmam litteram nōn posset dīcere
study/3sg subj first-letter/acc not could/3sg subj say/inf
'since he was such a stammerer that he could not pronounce the first letter of the very art he was studying'

(Cicero *Dē Ōrātōre* I.61.260)

Here the subjunctive *studēret* occurs in place of the imperfect indicative *studēbat* by ''attraction'' with the subjunctive *posset*. Thus, mood markers are syntactically relevant in that they can affect the form of words associated with them.[14] Yet they never occur in final position and are always ''inner'' with respect to the personal endings.

Thus, the notion ''syntactic relevance'' cannot be used to determine the order of morphemes in Latin nouns and verbs, since it predicts that certain elements should be in ultimate head position when in fact they are not. Williams's system, therefore, fails to account for this aspect of the ordering of morphemes in Latin words.

4. Conclusion

We have shown here that Williams's (1981) analysis of Latin is seriously flawed and that not only his theory of the paradigm but also associated notions such as ''syntactic relevance'' fail to yield the results they were designed for. To a certain extent, the problems with Williams's analysis of Latin stem from the methodological oversight of not establishing an appropriate corpus for the description of Latin morphology. No Latin sources are acknowledged, so that in view of the numerous errors and omissions in the Latin itself,[15] the forms that are cited in support of his analysis must be discounted accordingly. Similarly, Williams does not make clear what he means by ''Latin''—is it Classical Latin in general or just Cicero's usage; does it include later Classical authors such as Pliny the Younger and Tacitus or not; is it elegant literary Latin (e.g. Virgil or Horace) or

[14] We have given this example because it is unlikely to be semantically controlled. Other sequence-of-tense/mood phenomena traditionally described for Latin could well be semantic and hence not relevant here.

[15] Some omissions and errors are noted in section 2 and in footnote 3. The other errors of fact are as follows:

(a) Williams generally fails to indicate the length of Latin vowels, especially for first conjugation verbs in *-ā*, e.g. *amā-*.

(b) Williams cites (p. 269) only one (*-rī*) of the two (*-rī/-ī*) present passive infinitive endings. The third conjugation regularly uses the ending *-ī*, e.g. *capī* 'to be seized'. The remaining conjugations (1, 2, 4) use the ending *-rī*.

(c) Williams claims (p. 268) that the third declension neuter nominative/accusative singular ending is *-us*. Most Latin third declension neuter nouns are counterexamples to this statement, e.g. *animal* 'animal', *cor* 'heart', *calcar* 'spur', *ōs* 'mouth', *os* 'bone', *nōmen* 'name', *mare* 'sea', etc. (see Allen and Greenough (1903, 26–30)). There are a few neuter nouns that do end in *-us*, e.g. *opus* 'work', *corpus* 'body', *genus* 'family'. However, the *-us* in these cases is part of the stem and not a nominative/accusative ending.

Finally, Williams is inconsistent in his segmentations for numerous Latin verb forms, giving, for example, three different morphological analyses of the future morpheme; for relevant discussion, see DeWandel (1982), Lieber (1980), and Redenbarger (1976).

low-style literary Latin (e.g. Apuleius or Petronius), which is said to reflect popular speech (Pulgram (1958, 314))?[16]

This concern is not an idle one, for Williams's failure to specify his corpus and sources essentially makes his analysis untestable. His ''experiment'' cannot be replicated, let alone fully analyzed and critically evaluated, because we do not know whether he was examining Ciceronian usage alone (though we doubt it), or literary usage in general, or some other usage altogether.[17]

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[16] The relation among these several sociolects and varieties is a complex sociolinguistic question to which we do not even pretend to have an answer here; we merely acknowledge that this is a factor that any truly adequate analysis of Latin morphology must ultimately grapple with, and note that Williams does not even recognize the existence of such an issue.

[17] Lest we be accused of a similar methodological error, let us state here the corpus and sources upon which we have based our critique. We have relied on standard Latin reference works, such as Allen and Greenough (1903), Ernout (1953), and Leumann, Hofmann, and Szantyr (1977). Since the point of reference for these grammars is the literary variety of Latin of the Ciceronian age, most of the forms we cite can be found in the writings of Cicero or his contemporaries. Since these writers were of diverse social, ethnic, and regional backgrounds and often used archaic forms, we have not hesitated to cite forms from as early as Ennius (circa 200 B.C.) or as late as Tacitus (circa A.D. 100), reflecting our belief that such morphological variation must have formed part of the average educated Latin speaker's linguistic competence.

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Word Order in Hungarian Complex Sentences

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In this article I will discuss the central claims concerning complex sentences presented in section 2 of Katalin É. Kiss's article "Structural Relations in Hungarian, a 'Free' Word Order Language" (É. Kiss (1981)), and I will offer an alternative proposal both for describing the ordering of embedded sentences and for the movement of constituents between the embedded and the matrix sentences.

First I will summarize É. Kiss's pioneering work in the analysis of word order in simple sentences (É. Kiss (1978a; 1980; 1981)).

Hungarian sentences are supposed to have an invariant structure determined by the following set of rules,

(1) a. $S'' \rightarrow X^{n*}\ S'$
b. $S' \rightarrow X^{n}\ S^{0}$
c. $S^{0} \rightarrow V\ X^{n*}$

where X^{n*} stands for an arbitrary number of maximal major categories. The resulting trees, which have the schematic form (2), are subject to the operation of rules of the Move α type, which in effect move constituents from S^0 into positions in S′ (Focus) and S″ (Topic).

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