

RESEARCH ARTICLE

Imagining life without Rules of Exponence and the Elsewhere Condition: An evaluation of a Morphology as Syntax approach to Latin noun declension

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Abstract

The notion that there are Rules of Exponence, that they compete, and that their competition is regulated by the Elsewhere Condition, is a point of consensus that unites many approaches to morphology which otherwise differ significantly in their core tenets, forming the cornerstone of the family of theories dubbed *realizational*. Recent work in the Morphology as Syntax (MaS) framework seeks to undermine this cornerstone. In its place, MaS proposes a non-realizational theory in which all allomorphy and morphotactics are captured using mechanisms which are familiar from syntactic theory, leaving no room for competition via the Elsewhere Condition. This paper describes a fragment of a grammar for Latin noun declension which I have developed in the MaS framework. The fragment highlights a number of interesting properties of MaS, including at least one which I will suggest weighs heavily against it: eschewal of the Elsewhere Condition comes at a steep price in the overall complexity of the system, and in particular in the amount of accidental homophony the account must assume.

Keywords: Elsewhere Condition, Realization, Morphology as Syntax, Latin, Declension

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1. Introduction

The notion that there are Rules of Exponence, that they compete, and that their competition is regulated by the Elsewhere Condition, is a point of consensus that unites many approaches to morphology which otherwise differ significantly in their core tenets, forming the cornerstone of the family of theories dubbed *realizational* (Anderson 1992, 132; Asudeh, Bögel, and Siddiqi 2023; Halle and Marantz 1993, 123; Starke 2009, 4; Stump 2001b, 22; Stump 2016, 50, amongst many others). Recent work in the Morphology as Syntax (MaS) framework seeks to undermine this cornerstone (see amongst others Collins 2018, 2020; several of the papers in Kayne 2019; Kayne 2020; Collins and Kayne 2023). In its place, MaS proposes a non-realizational theory in which all allomorphy and morphotactics are captured using mechanisms which are familiar from syntactic theory, leaving no room for competition via the Elsewhere Condition.

This is a radical, interesting move, and its consequences merit exploration. Evaluating these consequences is difficult, however, in the absence of an in-depth study of a substantial portion of a complex inflectional system. While the existing literature on Morphology as Syntax is rich in case-studies of individual phenomena, I know of nothing in the framework comparable to Matthews' fragment of a grammar for Latin verb conjugation in his Word-and-Paradigm approach (Matthews 1965), Anderson's analyses of the agreement systems of Potawatami and Georgian in his A-morphous Morphology theory (Anderson 1992, Ch 6), or Halle and Marantz's counter-analyses of the latter from a Distributed Morphology perspective (Halle and Marantz 1993).

In an effort to fill this gap, I have developed a fragment of a grammar for a substantial (albeit sanitized) portion of the Latin noun declension system in the MaS framework. The fragment makes crucial use of proposals regarding irregular plurals in Collins (2018) and of the approach to case contiguity in Collins (2020); in general it hews as closely as possible to the MaS framework as outlined in Collins and Kayne (2023). Space constraints obviously preclude a comprehensive laying-out of this fragment in a paper of this kind. My goals here are accordingly much less ambitious, and are as follows. The first is to give an overview of this fragment, with special emphasis on what it teaches us about MaS approaches to such morphologically important issues as (meta)syncretism, inflectional classes, cumulative exponence (fusion), and conditioned allomorphy. The second is to use this overview to evaluate the consequences of abandoning Rules of Exponence and the notion that they compete via the Elsewhere Condition, as MaS urges us to do.

To foreshadow my conclusions, I shall be arguing that (i) MaS gives rise to interesting and novel approaches to case (meta)syncretism (on metasyncretism, see Williams 1994; Bobaljik 2001, et seq.), to secondary exponence, and to class-based allomorphy, which in the case of my fragment may perhaps be credited

with leading to a new discovery about morphological decomposition in Latin; but that (ii) MaS pays for its eschewal of Rules of Exponence with unfortunate consequences for the theory of syntax (especially the nature of Agree), and it pays for its eschewal of the Elsewhere Condition with the need to appeal to a highly complex inventory of morphemes, exhibiting massive amounts of accidental homophony. The costs mentioned in (ii) are, in my estimation, unacceptably high, but the reader will have to make their own mind up about this.

The rest of this paper is structured as follows. Section 2 provides an introduction to the Latin noun declension system, and sketches how the analysis of it in the MaS fragment (particularly with regard to the morphological decomposition of the noun) differs from the traditional analysis. Section 3 gives a detailed overview of the MaS framework in general and of my fragment in particular, focusing on the syntactic part of the fragment. Section 4 turns to an evaluation of the strengths and weaknesses of the fragment. Section 5 concludes with some methodological remarks and some directions for future research.

2. Latin Noun Declension, and the Animating Intuitions of the MaS Fragment

Nouns in Latin inflect for number (singular and plural) and for case (nominative, accusative, genitive, dative, ablative, and vocative; some descriptions also acknowledge a separate locative case, although the MaS fragment does not, as we will see). They are traditionally divided into a number of separate *declension classes* according to which set of endings they take to mark these categories. The number of declension classes recognized in traditional grammars is five (see, for example, Allen and Greenough 1888, 16–45), but Weiss (2009, 213) instead suggests six, and the MaS fragment has seven. The divergences here have to do with whether what is traditionally called the third declension needs to be subdivided, and if so, how many sub-distinctions must be admitted. I will ignore this question, and indeed the third declension generally, for the remainder of this paper.¹ Declension class is often expounded overtly via a theme vowel.

Latin nouns almost invariably have one of three genders: masculine, feminine, or neuter. In nouns, gender is never expounded independently of declension class. However, neuters decline differently from non-neuters. There are in addition a

1. This omission is motivated by the fact that this paper focuses on the morphosyntactic part of the fragment, rather than the morphophonological part. The surface phonological forms in the third declension are related to their underlying forms in a much less straightforward way than is the case in the other declensions, so that discussing this declension in depth would require a deeper look at the morphophonological part of the fragment than is practical here. The reason for the third declension's eccentric morphophonology is that many of its forms have a null theme vowel, which means that the case and number endings come to be involved in alternations triggered by their proximity to stem-final consonants, a proximity that doesn't arise in the other declensions, where the theme vowel is never underlyingly zero. See in particular Householder (1947).

number of statistical correlations between declension class and gender – for example, the first declension is overwhelmingly feminine, with a handful of masculine nouns and no neuters; the second declension, in contrast, consists almost entirely of masculine and neuter nouns; all three genders are well-represented in the third declension, though. None of these statistical regularities are captured by the fragment, and I will say no more about them here.

Many analyses recognize a decomposition of Latin nouns into three components: the stem, the theme vowel, and a fused marker exponing Case and Number simultaneously (see for example Halle and Vaux 1998; Oniga 2014):

(1) **Traditional Decomposition of the Latin Noun**

Stem-Theme-Case&Num

The Morphology as Syntax framework forces us to seek a somewhat different decomposition. As we will see, the theory has no counterpart of the DM operation of Fusion. In addition, the fact that case and number markings are clearly separate in some languages motivates the idea that these are separate syntactic projections in the universal nominal functional sequence. The decomposition proposed in the MaS fragment, which I believe to be novel, is instead as follows (the presented affix order is the general one; the genitive plural in the 1st, 2nd, and 5th declensions will be claimed to involve a different affix order, as we shall see):

(2) **Decomposition of the Latin Noun Proposed Here**

Stem-Theme-(Num)-Case-Num

The optional instance of Num shaded in gray in (2) is a special low number marker, present by hypothesis with all neuter nouns, and with nouns of the 1st and 2nd declensions. This is followed on the surface by the Case marker, which in turn is followed by the regular Number marker. The proposal is that the regular Number marker in Latin nouns is always zero in the singular, and always (except when deleted under adjacency with a low number marker) underlyingly /s/ in the plural. The reason that traditional descriptions have assumed that Latin has cumulative exponence of Case and Number is that plural /s/ fails to surface as such in a number of circumstances, coupled with the fact that the allomorphy of Case is sensitive to the features of Num (in a MaS framework, this sensitivity has to be cashed out in terms of Agree, as we will see). Another way of putting this is that, if the present proposal is correct, Latin in fact has *overlapping* exponence for Case and Number, rather than cumulative exponence (in the terminology of Matthews 1972) as has traditionally been assumed: there is a marker for Number alone, and a Case marker which is sensitive to number.

For a clearer sense of how this works, let us begin by seeing how the suffixes in the 4th declension are segmented on this approach, using the example of the masculine noun *status* ‘rank, class’. I begin by presenting the data in unsegmented

format, using the IPA. Long vowels are represented using a colon; sequences of vowel symbols (including identical vowel symbols) represent vowels in hiatus.

Table 1. 4th Declension Masculine Surface Forms, Unsegmented

Case/Num	SG	PL
Nominative	status	statu:s
Accusative	statum	statu:s
Genitive	statu:s	statuum
Dative	statui:	statibus
Ablative	statu:	statibus

These surface forms are produced by a series of phonological rules applying to a sequence of Underlying Representations, broken down morphologically as illustrated in Table 2. In this declension table, and in all other decompositional tables found in this paper, the following conventions are observed. Case morphemes are given in **blue**, and regular number morphemes are given in **red**. Irregular, “low” plural morphemes are instead given in **gray** (masculine 4th declension nouns like *status* do not take such a marker, but see below for an illustrative sample derivation for a 2nd declension noun). Proposed phonological deletions that play an important role in understanding the decomposition are shown with a ~~strikethrough~~. Epenthetic vowels (which are not in evidence in the 4th declension, but are found elsewhere) are underlined. The stem and the declension class marker are given in plain black text. The symbol μ represents a floating mora.

Table 2. 4th Declension Masculine With Proposed Segmentation

Case/Num	SG	PL
Nominative	stat-u- s - $\emptyset$	stat-u- μ - s
Accusative	stat-u- m - $\emptyset$	stat-u- μ - s
Genitive	stat-u- μs - $\emptyset$	stat-u- um - s
Dative	stat-u- i - $\emptyset$	stat-u- ibu - s
Ablative	stat-u- μ - $\emptyset$	stat-u- ibu - s

Lengthened forms of the theme vowel /u/ in the genitive singular, the ablative singular, the nominative plural, and the accusative plural are produced by the docking of the floating mora from the following Case suffix. A rule deleting a high vowel before a following short /i/ accounts for the surface absence of the theme vowel /u/ in the dative and ablative plural. Finally, the surface absence of the plural /s/ from the genitive plural form *statuum* is derived by the following rule,

the existence of which is supported by the complete surface absence of word final *ms* sequences in the language.²

$$(3) \quad s \rightarrow \emptyset / m_ \#$$

The fate of the plural /s/ is different in the genitive plural forms of the 1st, 2nd, and 5th declensions. In addition, plural /s/ is not found in the nominative plurals of 1st and 2nd declension nouns. Nor is it found in the nominative or accusative plurals of any neuter noun (neuter nouns are mostly concentrated in the 2nd and 3rd declensions, with a handful in the 4th). To explain how the fragment addresses these issues, let us begin with the surface forms for the 2nd declension masculine noun *dominus* ‘lord, master’.

Table 3. 2nd Declension Masculine Surface Forms, Unsegmented

Case/Num	SG	PL
Nominative	dominus	domini:
Accusative	dominum	domino:s
Genitive	domini:	domino:rum
Dative	domino:	domini:s
Ablative	domino:	domini:s

Below, I present the decomposition assigned by the fragment to these forms (recall that case markers are in **blue**, regular number markers are in **red**, and special irregular low number markers are in **gray**):

Following Oniga (2014), which is the main source of most of the phonological rules adopted in the fragment, the Underlying Representation for the 2nd declension theme vowel is taken to be /o/. Short /o/ raises to /u/ systematically before a sequence of /s/ or /m/ followed by a word boundary. Another completely general rule deletes non-high short vowels when another vowel follows across a morpheme boundary; this accounts for the disappearance of the theme vowel in the genitive singular, the nominative plural, and the dative and ablative plural.

2. The nominative singular form of the noun written *hiems*, *hiemis* ‘winter’ is known to have been pronounced *hiemps*. The reason why the word-final *ms* sequence is resolved by epenthesis here rather than by deletion is not addressed in the fragment as it stands, but two directions suggest themselves. One would make hay of the fact that the boundary in the case of *hiem-s* is between the stem and the case morpheme, rather than between the case morpheme and the plural morpheme as it is in *statuum* and similar examples; an account in terms of different morphophonological strata or boundary symbols could be developed on the basis of this observation. Another would take advantage of the fact that /*hiems*/ seems to be a completely unique UR in the language, by proposing the ad-hoc rule (i), which would bleed rule (3).

(i) $\emptyset \rightarrow p / em_ \#$

Table 4. 2nd Declension Masculine with Proposed Segmentation

Case/Num	SG	PL
Nominative	domin-u- s - $\emptyset$	domin- $\emptyset$ -i:- $\emptyset$
Accusative	domin-u- m - $\emptyset$	domin-o- μ - s
Genitive	domin- $\emptyset$ -i:- $\emptyset$	domin-o:- r - um
Dative	domin-o- μ - $\emptyset$	domin- $\emptyset$ -i:- s
Ablative	domin-o- μ - $\emptyset$	domin- $\emptyset$ -i:- s

Returning to the fate of plural /s/, let us focus first on the nominative plural, ignoring the genitive plural for now. The proposal is that /s/ is absent from the input to the phonological rules in the nominative plural, having been deleted under adjacency with the special irregular plural marker /i:/ associated with this declension – this, modulo the addition of an adjacency condition on the relevant deletion rule, is precisely Collins (2018)’s MaS account of irregular plurals in English, applied to Latin. The motivation for the novel adjacency condition on this deletion rule is revealed by the fact that, in all cases other than the nominative, the irregular plural is not found, and the regular plural is found instead. This is because, in all cases other than the nominative, the case morpheme is overt. This breaks the adjacency between the two plural markers, so that the structural description of the deletion rule is not met. In such derivations, a generalized and parameterized version of Kinyalolo’s Constraint (Kinyalolo 1991, Carstens 2005, et seq) will cause the lower plural marker to be deleted under c-command by the higher plural marker.

Finally, we turn back to the genitive plural in Table 4. The claim here is that the affix order is different in this form, and that the underlying regular plural /s/ surfaces instead as *r*. In the fragment, this is cashed out as follows: in all other forms, the noun stem moves leftwards past the Case marker, and strands the Number marker when it does so. In the genitive forms of the 1st, 2nd, and 5th declensions, however, the movement of the noun stem pied-pipes a category containing the plural marker. This makes the input to the phonology in the case at hand /domin-o-**s**-**um**/,³ with the surface form being produced as follows:

- (4) UR: /domin-o-s-um/
 dominorum (rhotacism)
 domino:rum (lengthening before heteromorphemic r)
 SR: domino:rum

3. The alert reader will be wondering why the special irregular plural /i:/ is absent from this UR, and relatedly why the regular plural /s/ is not deleted under adjacency with it by the same rule invoked in the discussion of the nominative plural. For expository reasons, I delay discussion of this until the following section.

Rhotacism, which by the Classical period was no longer an automatic phonological alternation (see especially Gorman 2014), is given the morphologically restricted formulation in (5) by Oniga (2014, 58, his (20)), though it should be noted that even this formulation has exceptions that are not handled by the fragment as it stands (for some discussion, see the phonological part of the fragment, available online). The notion that the surface *r* of the genitive plural of the relevant declensions is an underlying /s/ which has undergone rhotacism has an antecedent in the DM analysis of Latin declension presented by Halle and Vaux (1998), although for them the /s/ is the default realization for any feature bundle, rather than being an instantiation of a regular plural marker.

$$(5) \quad s \rightarrow r / V_ + V \quad (\text{rhotacism})$$

Rhotacism feeds the following rule, which to my knowledge is original to this fragment. This rule explains, via its restriction to applying across morpheme boundaries, such contrasts as /domin+o+s+um/ ‘lord.genitive.plural’ yielding *domino:rum*, whereas /korpos+um+s/ ‘body.genitive.plural’ instead yields *korporum*, with no lengthening of underlying /o/.

$$(6) \quad V \rightarrow V: / _ + r \quad (\text{lengthening before heteromorphemic } r)$$

The account of neuter nouns can be illustrated simply using a neuter noun of the 2nd declension, such as *regnum* ‘kingdom’.

Table 5. 2nd Declension Neuter Surface Forms, Unsegmented

Case/Num	SG	PL
Nominative	regnum	regna
Accusative	regnum	regna
Genitive	regni:	regno:rum
Dative	regno:	regni:s
Ablative	regno:	regni:s

The phonological rules already introduced suffice to explain the alternations on display here without further ado. The unique features of the neuter paradigm here are all morphological (ultimately syntactic, given MaS assumptions), and can be summarized thus: (i) the nominative singular suffix for regular 2nd declension neuters is /m/, (ii) all neuter nouns in the language are associated with a low plural marker /a/, and (iii) there is exactly one accusative case morpheme that goes with neuter nouns in the language, which is insensitive to number and is null. The last of these properties explains why the special irregular plural of neuters extends to the accusative rather than being restricted to the nominative – the rule of regular plural

Table 6. 2nd Declension Neuter with Proposed Segmentation

Case/Num	SG	PL
Nominative	regn-o- m - $\emptyset$	regn- $\emptyset$ -a- $\emptyset$
Accusative	regn-o- m - $\emptyset$	regn- $\emptyset$ -a- $\emptyset$
Genitive	regn- $\emptyset$ - i - $\emptyset$	regn-o- r-um
Dative	regn-o- μ - $\emptyset$	regn- $\emptyset$ - i - s
Ablative	regn-o- μ - $\emptyset$	regn- $\emptyset$ - i - s

deletion under adjacency with a low plural marker applies here as well. As we will see later, the property in (iii) also explains the pervasive nominative-accusative metasyncretism found in all Latin neuters, given certain assumptions about the realization of Case morphemes adapted from Collins (2020).

This section has introduced the Latin declension system and given an informal introduction to the decomposition of Latin nouns and the phonological analysis proposed by the fragment, some aspects of which, especially as regards number marking, are novel (as far as I know). The next section gets into the details of the workings of Morphology as Syntax as a framework in general, and of the workings of the present fragment in particular.

3. Morphology as Syntax and the Fragment

This section begins with some general remarks about Morphology as Syntax (Section 3.1), followed by a discussion of the specific ways in which the data for the fragment have been “sanitized” (3.2). An overview of the contents of the fragment is given in Section 3.3, and the two subsequent sections deal in turn with two different aspects of the syntactic part of the fragment: its syntactic operations and constraints (3.4) and the functional part of the lexicon (3.5). The workings of the fragment are illustrated with some sample derivations in Section 3.6.

3.1 Morphology as Syntax

Morphology as Syntax is a traditional “Item-and-Arrangement” theory in the terminology of Hockett (1954). As the name of the framework suggests, syntax builds all “word”-internal structure in MaS. Unlike the other mainstream syntacticist theories of morphology (Distributed Morphology and Nanosyntax), it is non-realizational in character: the pieces manipulated by syntax are each specified with a phonological matrix in the lexicon. A core commitment of MaS is that all departures from the “agglutinative ideal” have to be handled using operations and constraints provided by syntactic theory. Latin is, of course, celebrated for exhibiting a large number of such departures, which is why I chose it as a testbed for this project.

MaS does not logically bind one to any specific syntactic theory; rather, to pursue MaS is to adopt the position that the correct theory of syntax (whatever that turns out to be) is also the correct theory of morphology. Nevertheless, all of the work carried out in the framework to date (including the present paper) has been undertaken in a version of the Minimalist Program supplemented by certain innovations from Kayne's work. Selection, movement, and silent elements have therefore all been prominent amongst the syntactic tools deployed in MaS analyses, as they will continue to be here.

3.2 *Scope and Limits of the Fragment*

In the introduction to this paper, I characterized the data that form the basis for the MaS fragment as “sanitized”, by which I meant that the data set is, in various respects, a conscious simplification of what Latin was actually like. These simplifications can be defended on two grounds. The first is that the primary object of study here is the properties of Morphology as Syntax as a framework, not the properties of Latin. The second is that, insofar as what is included reflects core aspects of the organization of the declension system of which any framework must have an analysis, what we learn by studying this data set is still guaranteed to be informative, however incomplete the resulting picture of Latin might be.

With this in mind, I list the ways in which the data for the fragment have been sanitized here. The primary one is that the fragment is based on textbook presentations of the declension paradigms (especially Oniga 2014, Allen and Greenough 1903 via Ayer 2014, and Allen and Greenough 1888), rather than texts. Another is that it deals with nouns only, laying aside other declinable word classes such as adjectives and demonstratives. Irregular stem alternations (on which see McFadden 2018) receive no treatment; the same fate befalls incompletely assimilated loan words. The vocative and locative cases are ignored (I will note, however, that Calabrese 2008, 169 presents observations which weigh heavily against the notion of a separate locative case in Latin). I have abstracted entirely away from the phenomenon of heteroclisis (i.e., certain nouns behaving sometimes as if they belong to one declension, and sometimes as if they belong to another), as well as from certain unusual, restricted case forms exemplified by *filia:bus*,⁴ *pater familia:s*,⁵ and similar monstrosities.

4. The nouns *filia* ‘daughter’ and *filius* ‘son’ have identical dative plural forms: *filiis* in both cases. To avoid the resulting ambiguity, legal texts often instead use *filia:bus* for the dative plural of the noun for ‘daughter’, appropriating the ending from the 3rd, 4th, and 5th declensions instead of the expected one for 1st and 2nd declension nouns.

5. This expression means “father of a family”, but the form *familia:s* looks like an accusative plural, rather than the expected genitive singular.

3.3 *The Fragment as a Whole*

The fragment consists of (i) a syntactic part, (ii) a morphophonological part, and (iii) 110 handwritten sample derivations, of which 42 have been typeset in $\text{\LaTeX}$ and are included in the supplemental materials accompanying this paper (<https://tinyurl.com/5bw2tw9c>).⁶

The syntactic part is made up of the primitives listed in (7). The details on these are the topic of the next two subsections.

(7) **Syntactic Primitives**

- a. 41 lexical items
- b. One hierarchy of projections
- c. Merge
- d. A checking-based version of Agree
- e. Two deletion rules
- f. A generalized and parameterized version of Kinyalolo's Constraint
- g. A feature decomposition for the declension classes, omitted here (for expository reasons, here and in most of the supplemental documents, I instead use disjunctions over primitive declension class features).

The morphophonological part of the fragment consists of 33 phonological rules, couched in the notation of Chomsky and Halle (1968), supplemented with the symbol μ to represent a floating mora. Most of the rules themselves are taken directly from Oniga (2014), and have applications in the broader morphophonology of the language. The present paper does not discuss this part of the fragment in any detail, only introducing certain aspects of it where they are needed to understand the sample derivations. We now proceed to a detailed discussion of the syntactic part of the fragment.

3.4 *The Details Part 1: Syntactic Operations and Constraints*

3.4.1 *The Nominal Functional Sequence*

I adopt the idea that, universally, in the nominal domain case projections dominate number projections, which in turn dominate the lexical NP (see Moskal 2015 for especially strong evidence, and the references Moskal cites; compare also Universal 39 in Greenberg 1963, 75 and the updating thereof in Kloudová 2020). Following

6. The remaining 68 sample derivations are still in handwritten format. They have not been included with the supplemental materials because they are extremely difficult to read (the author suffers from a mild form of dyspraxia). They have nevertheless been made available at a separate website, mostly as proof of their own existence: <https://tinyurl.com/hdh3fva8>.

Caha (2009, 2013), and Collins (2020), case is in fact a field of projections with a universal hierarchy of its own. Putting these ideas together yields the following partial hierarchy of projections for the nominal domain (where “»” means “dominates”).

- (8) **The Nominal Functional Sequence (partial)**
 AblP»DatP»GenP»AccP»NomP»NumP»NP

While all nominal structures in all languages must obey this functional sequence,⁷ languages and individual lexical items within languages are free to vary in terms of whether they are subject to any additional syntactic requirements. In Latin, for example, almost all case heads are specified to Agree with a particular value for the Num attribute of NumP. Also, all case heads in Latin attract NP into their specifier, but they vary in terms of whether they place additional featural requirements on NP.

As for the internal structure of NP itself, I propose that it decomposes into at least a noun stem and a declension class marker. NP as a whole will bear values for gender (neuter, masculine, or feminine), +/-sigmatic,⁸ and declension class features (declension class features always come from the declension class marker, the other features may originate either on the stem or on the declension class marker). I assume that the declension classes are cross-classified by five binary features with underspecification permitted (see the separate document *Decomposing Latin Declension Class Features* in the supplemental materials for details). Here, I instead work with privative class features (1, 2, 3_i, 3_c, 3_{mixed}, 4, and 5) and disjunctions over them, but this is only for expository convenience.

In addition, following the account of irregular plurals of Collins (2018), I propose that some noun stems are specified in such a way that their dominating NP must merge with a special low number marker of category N_F. These include all neuter nouns in the language, and the non-neuters of the 1st and 2nd declension.

3.4.2 Syntactic Operations 1: Merge, Agree, and Agree-based-Checking

The syntactic component puts elements together via an operation known as Merge (Chomsky 1995), defined as follows.

- (9) **Merge**
 Merge(α, β) = { α, β }, where α and β are both syntactic objects.

7. This goes for ergative languages too, assuming that what is called ergative case is equivalent to Acc, and what is called absolutive case is equivalent to Nom, following Blake (1994). I leave open the treatment of languages with tripartite case systems.

8. +/-sigmatic is a Latin-specific subcategorical feature which is required to state the distribution of nominative singular allomorphs. Nominative singular in Latin has two main allomorphs: zero (conditioned by the feature -sigmatic) and /s/ (conditioned by the feature +sigmatic).

A “syntactic object” is always either a Lexical Item or the output of a previous application of Merge. For expository reasons, I use traditional-looking tree-diagrams in the sample derivations, rather than this set-theoretic notation.

Another syntactic operation, known as Agree, is standardly taken to assign a value to an unvalued feature on one element (called the Probe), by copying a compatible value from another element (called the Goal). It is usually defined as follows (compare Chomsky 2000, 2001, 2008):

(10) **Agree (standard definition)**

α can Agree with β iff:

- a. α carries at least one unvalued and uninterpretable feature and β carries a matching interpretable and valued feature.
- b. α c-commands β .
- c. β is the closest Goal to α .
- d. β bears an unvalued uninterpretable feature of its own.

The fourth of these conditions, often called the *Activity Condition*, has been shown not to hold universally (see amongst others Baker 2008, Halpert 2019, and Oxford 2017). It plays no role in the present analysis.

Since MaS is not a realizational theory, it is incompatible with situations where the valuing of an unvalued feature goes on to affect the allomorphy of the Probe (see Preminger 2021 and section 4 of this paper for discussion of the implications of this in the broader context of agreement phenomena). Internal to the present fragment, there is therefore a need for already-valued but uninterpretable features to be checked against interpretable, valued instances of the same feature. I thus propose the following, amended version of Agree:

(11) **Agree-based-Checking**

α can Agree with β iff:

- a. α carries at least one uninterpretable feature and β carries a matching interpretable feature.
- b. α c-commands β .
- c. β is the closest Goal to α .

Lexical items may bear instructions to carry out instances of Merge or Agree(-based-checking). Adapting notational conventions developed by Gereon Müller (see e.g. Müller 2009, 2013), requirements to Merge with a given syntactic object SO are notated as [$\bullet$ SO], and requirements to Agree with a given SO are indicated

with $[\square SO]$. In either case, a requirement which has been satisfied in the course of a syntactic derivation is shown as follows: $[\checkmark SO]$.⁹

3.4.3 Kinyalolo's Constraint Generalized

I propose that the following constraint schema is universally available to language acquirers.

- (12) **Kinyalolo's Constraint Generalized (KCG)** (cf. Kinyalolo 1991, 52, (65))
Within a given syntactic domain D, for a given feature F, only the highest overt head bearing an instance of F is pronounced on the surface if the values of F on lower heads are predictable from the value of F on the highest head.

Two key concepts invoked by this constraint are defined as follows:

- (13) **Highest head bearing an instance of F**
The highest head bearing an instance of a feature F is that head H such that (i) H bears F, (ii) for all other heads H' such that H' bears F, there is at least one copy of H that asymmetrically c-commands some copy of H', and no copy of H' that c-commands any copy of H.
- (14) **Overt**
A head H is overt iff (i) the value of H's PHON attribute does not equal $\emptyset$, and (ii) H's PHON feature is not marked for deletion.

See the next section for a discussion of marking for deletion.

KCG unifies the *No Crowding Constraint* of Collins (2020, 4),¹⁰ which says that only the highest overt head in the Case Field is spelled out, with effects involving phi-agreement which have been noted in many languages since Kinyalolo (1991); see Carstens (2005) (which introduced the name “Kinyalolo's Constraint”), Henderson (2011), Newman (2021), Oxford (2023), and Hewett and Kramer (2024), amongst others. I propose that this constraint holds in Latin for the values of Case features in the Case Field (where values on higher heads predict the values of lower ones given the universal functional sequence), and also for the feature values SG and PL across the nominal functional sequence (where low number markers of category N_F will, when present, always bear the same value for SG or PL as the higher Num head).

9. This goes for the typeset sample derivations; the hand-written ones use “.” indiscriminately for any syntactic requirement, and satisfaction is indicated by a strikethrough.

10. Note that Collins and Kayne (2023) use the name “No Crowding Constraint” to refer to a different restriction, namely a generalized version of the doubly filled comp filter. Collins (2020) instead refers to this latter restriction, which plays no role in the present fragment, as the *Edge Constraint*.

3.4.4 Syntactic Operations 2: Marking for Deletion

Following Collins (2018), I assume that syntactic operations can cause the phonological features of a given constituent not to be realized on the surface (ellipsis being the best known case of this). I will call this effect *marking for deletion*, adapting a familiar term. Two such operations have already implicitly been invoked: one enforces the generalized version of Kinyalolo's Constraint, and the other is usually called Chain Reduction, which ensures that lower copies of moved items are not pronounced (I leave open the possibility that these two cases might be unifiable). Two additional operations of this kind are proposed as part of this fragment.

- (15) **N_F :PL Deletion in GenP**
Structural Description: N_F :PL
Structural Change: Mark the PHON feature of N_F :PL for deletion
Condition: The highest copy of N_F :PL is dominated by GenP.

- (16) **Number Deletion Under Adjacency** (compare Collins (2018, 7, his (25))):
Structural Description: Num:PL or Num:SG
Structural Change: Mark the PHON feature of Num:PL/Num:SG for deletion
Condition: Num:PL/Num:SG is adjacent to a lexical item of category N_F with the same number value, and the PHON feature of N_F is not itself marked for deletion.

- (17) **Highest Copy**
The highest copy of X is the one which asymmetrically c-commands all other copies of X.

- (18) **Adjacency**
X is adjacent to Y iff for all Z such that X precedes Z and Z precedes Y, the PHON attribute of Z has the value $\emptyset$, or Z is marked for deletion.

These operations apply in the order shown, and both apply before Kinyalolo's Constraint is evaluated. This means that Kinyalolo-related marking-for-deletion of N_F , which would normally ensue because of the number features of the Num head, will be bled if Number Deletion Under Adjacency has taken place. Number Deletion Under Adjacency, in its turn, will be bled if N_F :PL Deletion in GenP has applied.

In the sample derivations provided in the supplemental materials (of which some are presented in Section 3.6 of this paper), PHON features that have been deleted under adjacency are marked in <angle brackets>, and ones that have been deleted under Kinyalolo's Constraint are instead marked with ~~strikethrough~~. PHON features that have been deleted by N_F :PL Deletion in GenP are marked using

<both>.¹¹ Deleted copies of moved items are represented using traces. This is purely to make it easier to follow what is happening; I assume that marking for deletion involves the same structural change no matter how it happens.

This concludes the discussion of the syntactic operations and constraints that make up the fragment.

3.5 The Details Part 2: Morphosyntactic Lexicon

3.5.1 The structure of lexical items in the fragment

This section presents a guide on how to interpret the lexical entries which are the input to syntax in the fragment. First, consider the following sample lexical items.

- (LI-1) Class:1, PHON:a, [*-sigmatic*]; [*•Stem*]
- (LI-2) Class:2, PHON:o; [*•Stem*]
- (LI-9) Num:PL, PHON:s; [*•np*]
- (LI-10) N_F:PL, Class:__, PHON:a; [*•np+neut*]
- (LI-38) N_F:PL, Class:__, PHON:j; [*•np-neut,class1*]
- (LI-11) Case:NOM, PHON:s; [*□Num : SG*], [*•np+sigmatic*]
- (LI-12) Case:NOM, PHON:∅; [*□Num : SG*], [*•np-neut,-sigmatic*]
- (LI-13) Case:NOM, PHON:m; [*□Num : SG*], [*•np_{class2,+neut,-sigmatic}*]
- (LI-24) Case:GEN, PHON:um; [*□Num : PL*], [*•np*]_{*pied-pipeAccPifNPclass=1,2,5!*}¹²

Notice that each one of these entries has a semi-colon somewhere in the middle of it. This semi-colon marks the boundary between what we might call the

11. In the hand-written sample derivations, which operation is responsible for marking something for deletion is unfortunately indicated somewhat inconsistently, but is sometimes indicated with prose annotations.

12. The specification for LI-24 requires it to merge with any NP. If the NP happens to be from the 1st, 2nd, or 5th declensions, then the NP additionally pied-pipes its containing AccP. This is what gives rise to the difference in affix order in the genitive plural which, via the phonology, accounts for the presence of an *-r-* in the surface forms of the genitive plural of the 1st, 2nd, and 5th declensions and the absence of one in the 3rd and 4th declensions. A reviewer rightly notes that the inclusion of such a pied-piping condition as part of the lexical specification of a morpheme is rather peculiar. I suspect that this device would have applications to other cases in which affix ordering varies in different morphological environments (of the kind typically dealt with by Local Dislocation and similar devices in the Distributed Morphology literature), but I must leave the exploration of this possibility for the future. There is also a connection here with Koopman 2005 et seq, where similar variation in the amount of pied-piped material is handled via morpheme-specific “Complexity Filters” on the content of specifiers.

“distinguishing” features of the Lexical Item on the left, and the operation-triggering features on the right.

Distinguishing features include an attribute-value pair denoting category (e.g. “Class:1” in the case of the Lexical Item corresponding to the theme vowel in the 1st declension, “Case:NOM” in the case of the nominative case markers, and so on). They also include a PHON attribute, whose value is the phonological Underlying Representation for the morpheme in question (this value may be null, as it is for LI-12). Since Rules of Exponence have no status in MaS, the PHON feature must be included in the syntactic representation. As we have already mentioned, this also means that there is no mechanism in the theory for syntactic operations to feed exponence (barring marking for deletion). For this reason, the distinguishing features of each node are usually fully specified; the one exception is with the N_F Lexical Items, which inherit their Class features from the NP they select. Finally, some Lexical Items are specified with one or more additional distinguishing features, such as +/–sigmatic, on which see footnote 8.

As for operation-triggering features, these take the form of a list. As discussed above, a requirement to Merge with a given syntactic object SO is notated as [$\bullet$ SO], and a requirement to Agree with a given SO is indicated with [$\square$ SO] (adapted from work by Gereon Müller, cited earlier). It is these Agree- and Merge-triggering features that account for the apparent allomorphy found in the case morphemes conditioned by gender, declension class, and number. The Merge-triggering features also account for the fact that the morpheme order in Latin nouns ends up being Stem-Theme-(Num)-Case-Num in the general case. The inclusion of the special pied-piping condition on the Merge-triggering feature in LI-24 accounts for the exceptional Stem-Theme-(~~Num~~)-Num-Case ordering found in the genitive plural forms of the 1st, 2nd, and 5th declensions.¹³

The reader is now in a position to comprehend the format for Lexical Items in the fragment. The next subsection presents the entire lexicon in full, for reference.

3.5.2 *The Morphosyntactic Lexicon in full*

- **Theme vowels/Declension class markers:**

- (LI-1) Class:1, PHON:a, [$-\text{sigmatic}$]; [$\bullet$ Stem]
- (LI-2) Class:2, PHON:o; [$\bullet$ Stem]
- (LI-3) Class:3_i, PHON:i; [$\bullet$ Stem]
- (LI-4) Class:3_c, PHON: $\emptyset$; [$\bullet$ Stem]

13. Recall that the deletion of the inner plural in 1st and 2nd declension genitive plural forms is effected by the rule in (15).

- (LI-5) Class:3_{*mixed*}, PHON:i;¹⁴ [**•Stem**]
 (LI-6) Class:4, PHON:u; [**•Stem**]
 (LI-7) Class:5, PHON:e:, [+sigmatic]; [**•Stem**]

• **Singular number markers:**

- (LI-8) Num:SG, PHON:∅; [**•np**]
 (LI-36) N_F:SG,Class:__, PHON:∅; [**•np_{+neut}**]
 (LI-37) N_F:SG,Class:__, PHON:∅; [**•np_{-neut,class1/2}**]

• **Plural number markers:**

- (LI-9) Num:PL, PHON:s; [**•np**]
 (LI-10) N_F:PL,Class:__, PHON:a; [**•np_{+neut}**]
 (LI-38) N_F:PL,Class:__, PHON:j; [**•np_{-neut,class1}**]
 (LI-39) N_F:PL,Class:__, PHON:i:; [**•np_{-neut,class2}**]

• **Nominative case markers:**

- (LI-11) Case:NOM, PHON:s; [$\square$ Num : SG], [**•np_{+sigmatic}**]
 (LI-12) Case:NOM, PHON:∅; [$\square$ Num : SG], [**•np_{-neut,-sigmatic}**]
 (LI-13) Case:NOM, PHON:m; [$\square$ Num : SG], [**•np_{class2,+neut,-sigmatic}**]
 (LI-14) Case:NOM, PHON:μ; [$\square$ Num : SG], [**•np_{class4,+neut,-sigmatic}**]
 (LI-42) Case:NOM, PHON:∅; [$\square$ Num : SG], [**•np_{class3,+neut,-sigmatic}**]
 (LI-15) Case:NOM, PHON:μ; [$\square$ Num : PL], [**•np_{class3/4/5,-neut}**]
 (LI-16) Case:NOM, PHON:∅; [$\square$ Num : PL], [**•np_{+neut}**]
 (LI-40) Case:NOM, PHON:∅; [$\square$ Num : PL], [**•np_{class1/2,-neut}**]

14. The segment /i/ represents a high front vowel which is representationally special in some way, and which is targeted by deletion rules in the morphophonological part of the fragment. These postulates collectively serve to capture the behavior of so-called “mixed” i-stems in the third declension. A more principled treatment might involve having this /i/ unlinked to the timing tier underlyingly, leading to its not being pronounced in certain circumstances.

- **Accusative case markers:**

(LI-17) Case:ACC, PHON:m; [$\square Num : SG$], [$\bullet np_{-neut}$]

(LI-18) Case:ACC, PHON: $\emptyset$; [$\square Num$], [$\bullet np_{+neut}$]

(LI-19) Case:ACC, PHON: $\emptyset$; [$\square Num : PL$], [$\bullet np_{class3/4/5, -neut}$]

(LI-41) Case:ACC, PHON: μ ; [$\square Num : PL$], [$\bullet np_{class1/2, -neut}$]

- **Genitive case markers:**

(LI-20) Case:GEN, PHON:j; [$\square Num : SG$], [$\bullet np_{class1}$]

(LI-21) Case:GEN, PHON:i; [$\square Num : SG$], [$\bullet np_{class2/5}$]

(LI-22) Case:GEN, PHON:is; [$\square Num : SG$], [$\bullet np_{class3}$]

(LI-23) Case:GEN, PHON: μs ; [$\square Num : SG$], [$\bullet np_{class4}$]

(LI-24) Case:GEN, PHON:um; [$\square Num : PL$], [$\bullet np$] _{pied-pipeAccPifNPclass=1,2,5!}

- **Dative case markers:**

(LI-25) Case:DAT, PHON: $\emptyset$; [$\square Num : SG$], [$\bullet np_{class1/5}$]

(LI-26) Case:DAT, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class2/3}$]

(LI-27) Case:DAT, PHON:i; [$\square Num : SG$], [$\bullet np_{class4, -neut}$]

(LI-28) Case:DAT, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class4, +neut}$]

(LI-29) **(collapsed with (LI-25))** <Case:DAT, PHON: $\emptyset$; [$\square Num : SG$], [$\bullet np_{class5}$]^{>15}

(LI-30) Case:DAT, PHON:i; [$\square Num : PL$], [$\bullet np_{class1/2}$]

(LI-31) Case:DAT, PHON:ibu; [$\square Num : PL$], [$\bullet np_{class3/4/5}$]

- **Ablative case markers:**

(LI-32) Case:ABL, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class1/4/5}$]

(LI-33) Case:ABL, PHON: $\emptyset$; [$\square Num : SG$], [$\bullet np_{class2/3i}$]

(LI-34) Case:ABL, PHON:e; [$\square Num : SG$], [$\bullet np_{class3}$]

(LI-35) Case:ABL, PHON: $\emptyset$; [$\square Num : PL$], [$\bullet np$]

15. This lexical item, which I ultimately abandoned in favor of collapsing it with LI-25, is reproduced here because it appears in some of the hand-written sample derivations which I had completed before the possibility of this simplification became apparent to me. LI-25, in its turn, occurs in an older version which references only class 1 in some of the hand-written sample derivations.

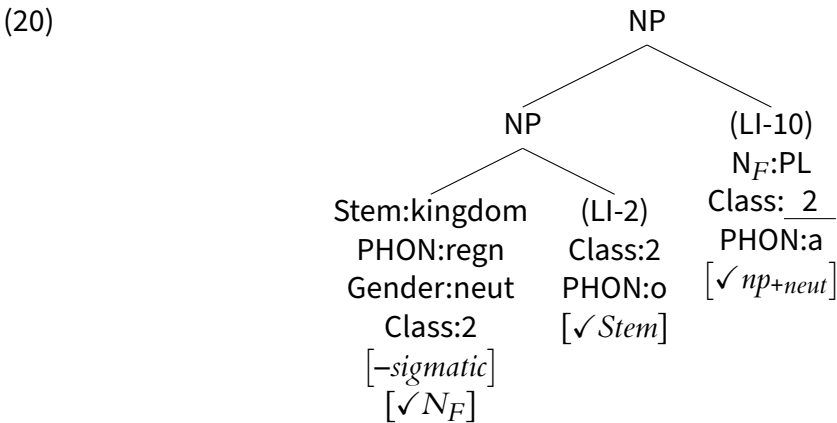
3.6 Some Sample Derivations

For space reasons, I will provide sample derivations for only one set of forms, chosen to maximize the opportunities to illustrate the syntactic operations of the fragment. The set in question is the plural forms of the second declension neuter noun *regnum, regni*: “kingdom”, the paradigm for which was provided in Table 5 (and in segmented form in Table 6).

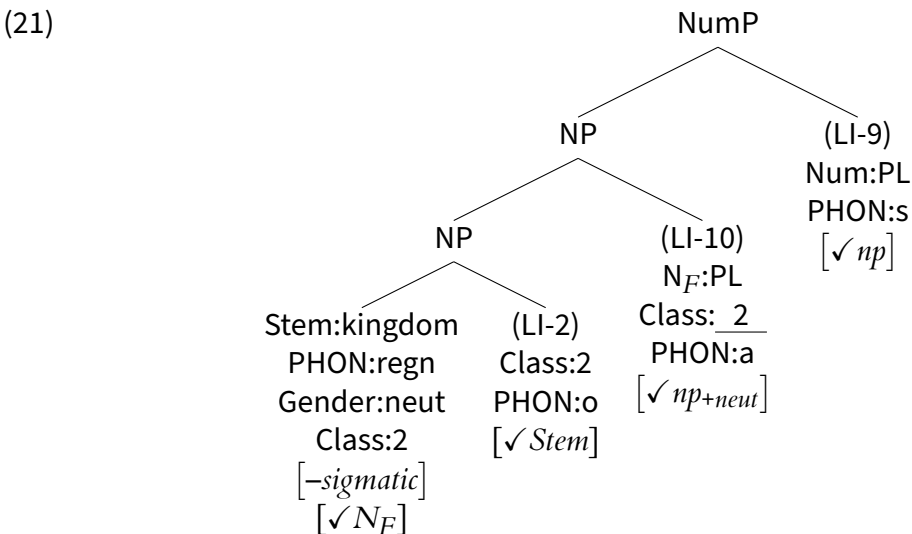
I assume the following lexical entry for the stem of this noun:

- (19) Stem:kingdom, PHON:regn, Gender:neut, Class:2, $[-\textit{sigmatic}]$; $[\bullet N_F]$

Combining this entry first with the 2nd declension theme vowel (LI-2) and then with the special low plural marker for neuter nouns (LI-10) yields the following structure:

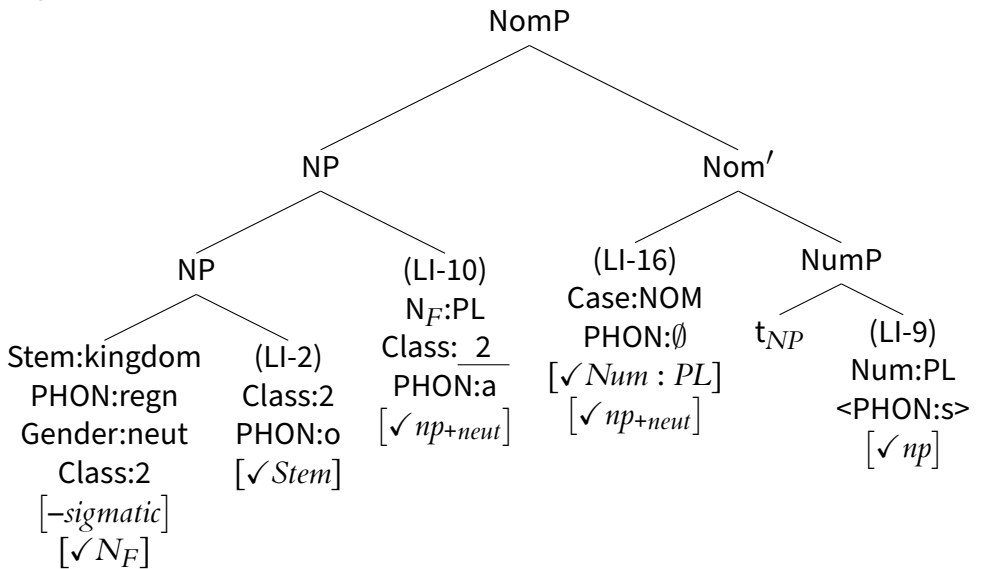


Given the hierarchy of projection, the next Lexical Item to Merge has to be the regular plural marker (LI-9):



The derivation of the nominative plural form will involve Merging LI-16, which is the only nominative case marker compatible with the structure constructed so far (the others all either need to Agree with something with the feature Num:SG, or they have a requirement to Merge with something other than a neuter noun). The NP is attracted into the specifier of this Case marker. Since the Case marker itself is null, the low plural marker (LI-10) counts as being adjacent to the regular plural marker (LI-9), meaning that the latter is marked for deletion by rule (16), indicated by <angle brackets>.

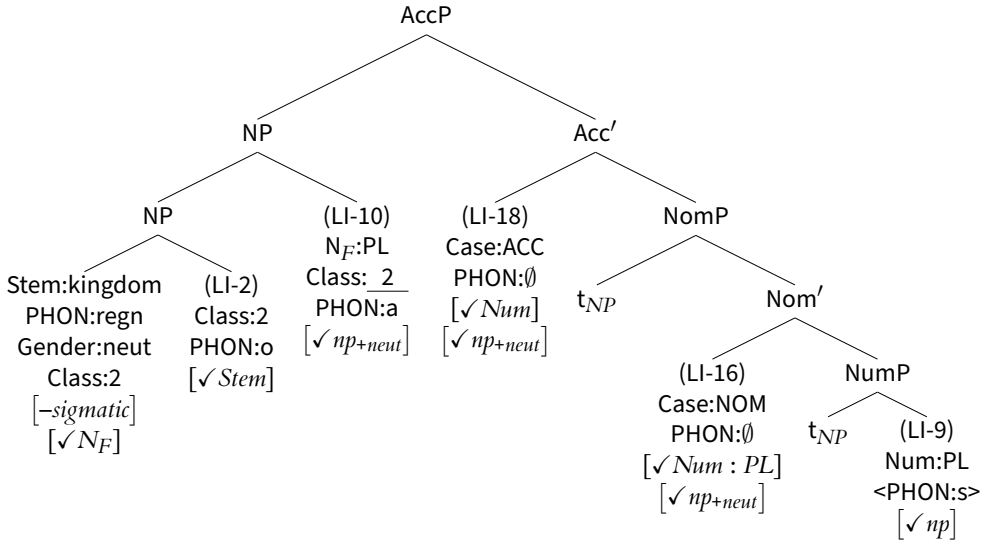
(22) regna (nominative plural)



The phonological UR for this form is therefore /regn-o-a/; deletion of the theme vowel under hiatus yields *regna* as the surface form.

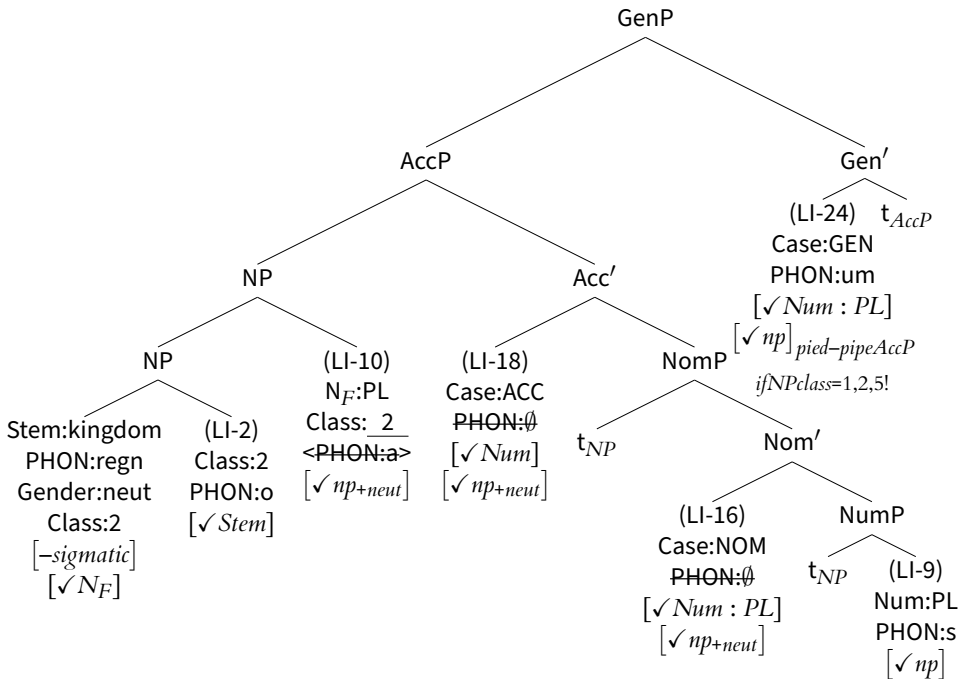
The derivation of the accusative plural form involves all the same iterations of Merge, plus two more. The first is the introduction of LI-18, the only Accusative Case marker whose syntactic features are compatible with the structure so far. The second is the attraction of the NP into the specifier of AccP. Because LI-18 is also phonologically null, the low plural and the regular plural are again adjacent, so rule (16) is triggered. The result is a form that looks identical to the nominative. Indeed, since LI-18 is the *only* neuter-seeking accusative case marker in the language, given that it happens to be null, *all* neuter accusative forms are guaranteed to be the same as their nominative form. The nominative/accusative metasyncretism in Latin neuter nouns is therefore explained.

(23) regna (accusative plural)



The genitive plural is derived by merging the structure of (23) with LI-24, which is the only plural-seeking genitive case marker in the language. Like all other case markers, it then attracts NP into its specifier. Uniquely, however, LI-24 induces pied-piping of AccP when NP bears certain declension class features, including that represented here by the feature Class:2. The result is therefore the structure in (24).

(24) regno:rum (genitive plural)

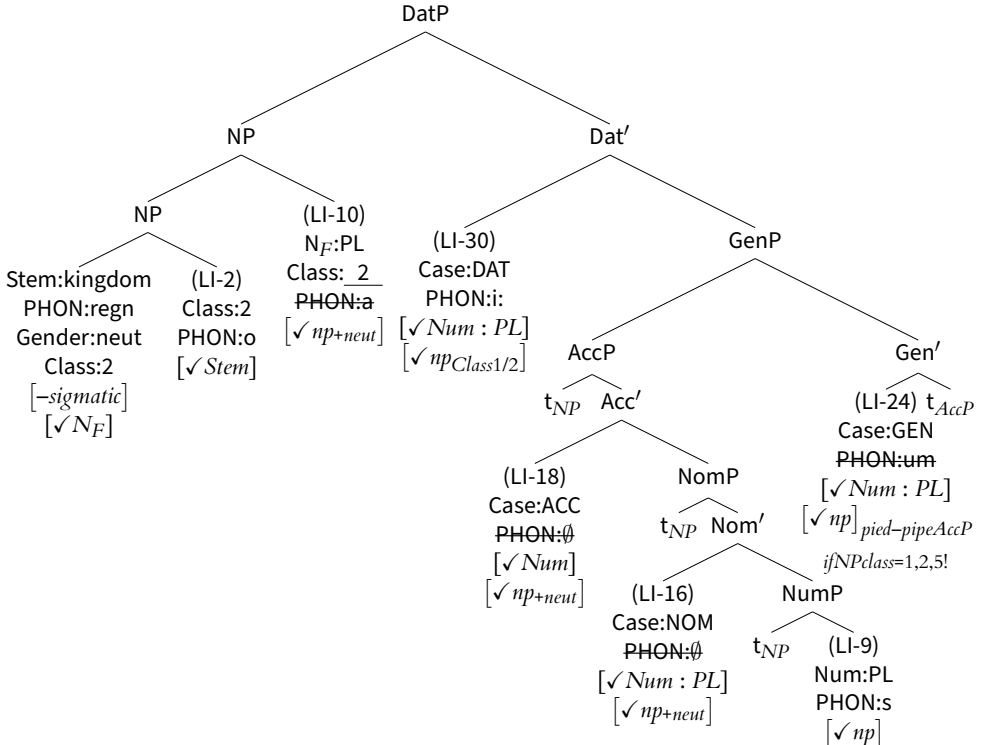


Here, *N_F-deletion-in-GenP* marks the irregular plural (LI-10) for deletion (indicated in (24) using both angle brackets and strikethrough notations simultaneously), crucially bleeding deletion rule (16) and allowing the regular plural to surface. Kinyalolo's Constraint Generalized induces (vacuous, given their nullness) marking for deletion of the accusative and nominative case markers. The resulting phonological UR, and its mapping to the SR, are given in the following derivation.

- (25) UR: /regn-o-s-um/
 regnum (rhotacism)
 regno:rum (lengthening before heteromorphemic r)
 SR: regno:rum

The dative plural is built on top of the structure in (24) in the by now familiar fashion. Since our NP has the Class:2 feature, only LI-30 of the dative case markers is permitted here. NP is attracted into spec-DatP without piedpiping, and the overtiness of the intervening case marker /i:/ ensures that deletion rule (16) cannot apply. Kinyalolo's Constraint Generalized marks the lower plural marker and all of the case markers except the dative for deletion, yielding /regn-o-i:-s/ as the UR. Vowel deletion gives the SR, which is *regni:s*.

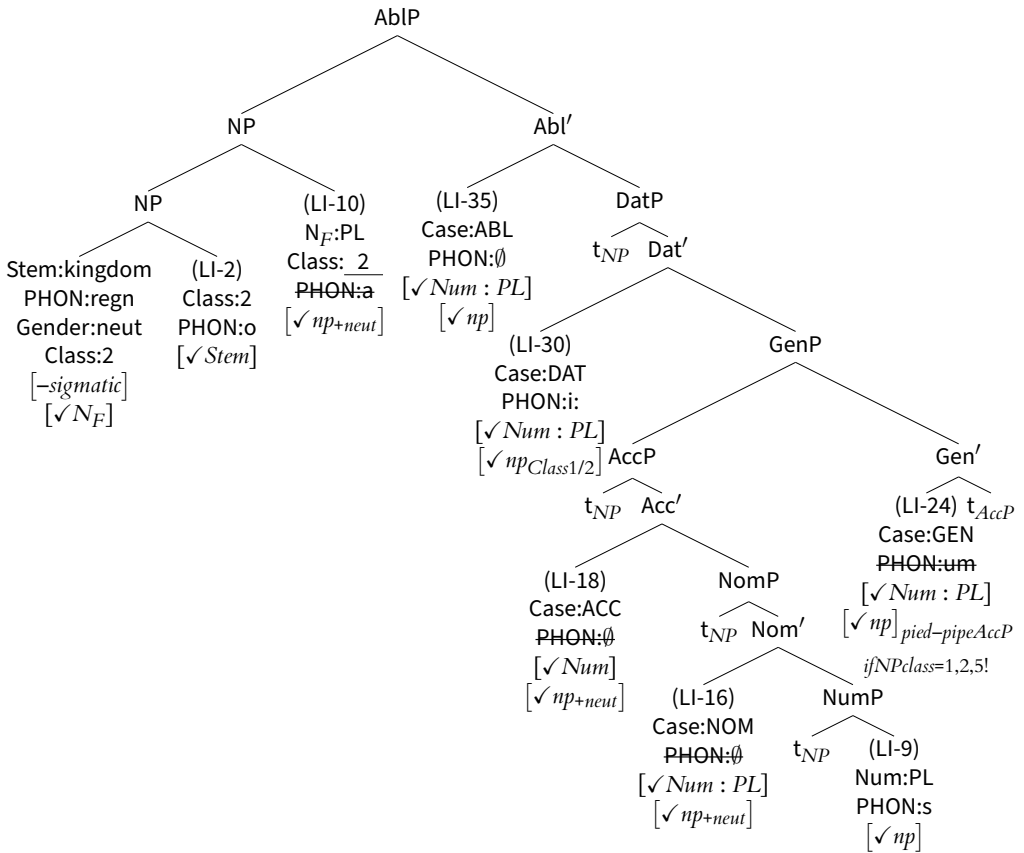
- (26) regni:s (dative plural)



The ablative plural is of special interest, because the relevant Lexical Item, LI-35, is null. Since Kinyalolo's Constraint Generalized deletes all but the highest **overt**

head of a particular kind, this means that the form produced looks identical to that of the dative plural. This is a direct transposition of the Collins (2020) approach to vertical case syncretisms in Classical Armenian. However, a novelty here is the observation that a simple generalization of Collins' strategy suffices to capture case metasyncretisms. LI-35 happens to be the only plural-seeking ablative case marker in the language, and it is wholly unpicky as to the declension class and gender features of the lexical NP. It thus follows that, no matter what affix happens to spell out the dative plural of a particular noun, its ablative plural will look the same. Thus is the other celebrated metasyncretism of Latin noun declension, that of the dative and ablative in the plural, explained.

(27) regni:s (ablative plural)



Narrower versions of the same strategy, where the higher null case head is at least somewhat selective as to declension class, derive “smaller” syncretisms such as that between the genitive and dative singular in the 1st and 5th declensions, between the dative and ablative singular in the 2nd declension, and so on.

3.7 *Interim Summary*

This section has described the MaS fragment for Latin noun declension in some depth, and illustrated its workings via sample derivations for the plural forms of a typical 2nd declension neuter noun. For convenience, an adapted version of the summary list of the morphosyntactic postulates that make up the fragment is repeated here from (7).

(28) **Syntactic Primitives**

- a. 41 lexical items
- b. One hierarchy of projections
- c. Merge
- d. A checking-based version of Agree
- e. Two deletion rules
- f. A generalized and parameterized version of Kinyalolo's Constraint
- g. A feature decomposition for the declension classes (omitted here)

We are now in a position to evaluate the fragment, and to ask what it teaches us about Morphology as Syntax as a framework. This is the topic of the next section.

4. **Evaluation**

This evaluation will proceed in three steps. In Section 4.1, I enumerate what I take to be the strengths of the fragment, focusing on those which follow from properties that are unique to MaS, or follow in an interesting way from its strong syntacticist leanings. Section 4.2 focuses on properties that are neither clearly good nor clearly bad, but which I believe deserve to be highlighted for what they reveal about how MaS is similar to and different from rival frameworks. These will include some ways in which MaS turns out to be closer in its properties to DM than is claimed in Collins and Kayne (2023), some implications of the fragment for existing MaS approaches to accidental homophony, and the intriguing observation that MaS, unlike realizational approaches, is committed to the non-existence of a single, unified explanation for metasyncretisms across different morphosyntactic domains. Finally, Section 4.3 discusses the deficiencies I perceive in the fragment, and considers their source. As anticipated in the introduction, I will argue that the biggest problems with the fragment all stem from the non-realizational nature of MaS: jettisoning Rules of Exponence which compete via the Elsewhere Condition comes at a cost.

4.1 The Positives

4.1.1 An Extremely Clean Account of Case Metasyncretisms

Perhaps the greatest virtue of the fragment is the one that springs from Collins's account of case syncretism (Collins 2020): the two big metasyncretisms of the language are captured very simply, via a deployment of the same general strategy:

(29) **Case Metasyncretism in Morphology as Syntax**

Case Metasyncretisms arise when (i) a higher case head is both null and less picky as to number, gender, and/or declension class than the case head immediately below it, and (ii) there is more than one lexical item in the language that can appear in the lower case position.

The sample derivations in Section 3.6 already showed this principle in action for both of these metasyncretisms. To convey the idea in a different way (and a more complete way when it comes to the actual affixes involved), below I present the Lexical Items which collectively give rise to the patterns of interest.

(30) **Nominative Markers Relevant to the Nom/Acc Metasyncretism in Neuters**

- (LI-11) Case:NOM, PHON:s; [$\square Num : SG$], [$\bullet np_{+sigmatic}$]¹⁶
 (LI-13) Case:NOM, PHON:m; [$\square Num : SG$], [$\bullet np_{class2,+neut,-sigmatic}$]
 (LI-14) Case:NOM, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class4,+neut,-sigmatic}$]
 (LI-42) Case:NOM, PHON: $\emptyset$; [$\square Num : SG$], [$\bullet np_{class3,+neut,-sigmatic}$]
 (LI-16) Case:NOM, PHON: $\emptyset$; [$\square Num : PL$], [$\bullet np_{+neut}$]

(31) **The Null Neuter-seeking Accusative Marker**

- (LI-18) Case:ACC, PHON: $\emptyset$; [$\square Num$], [$\bullet np_{+neut}$]

(32) **Dative Markers Relevant to the Dat/Abl Metasyncretism in the Plural**

- (LI-30) Case:DAT, PHON:i; [$\square Num : PL$], [$\bullet np_{class1/2}$]
 (LI-31) Case:DAT, PHON:ibu; [$\square Num : PL$], [$\bullet np_{class3/4/5}$]

(33) **The Null Plural-seeking Ablative Marker**

- (LI-35) Case:ABL, PHON: $\emptyset$; [$\square Num : PL$], [$\bullet np$]

16. Almost all neuter nouns are asigmatic, but there are a handful of sigmatic neuters in the second declension, including *wi:rus* 'poison', *pelagus* 'open sea', and *wulgus* 'crowd'. As expected, these nouns retain the forms given in the accusative.

Given that Metasyncretisms have often been taken to require a realizational framework with access to Rules of Referral, Rules of Impoverishment, or similar devices, it is a result of some interest that Morphology as Syntax is able to capture them in the domain of case in such a straightforward fashion (although see Section 4.3.2 for a potentially serious problem that arises for the account of the Neuter Metasyncretism in particular).

4.1.2 *Where we get special number marking, and where we don't*

Another positive contribution of the fragment, and by implication of MaS as a framework, is its enabling the discovery and explanation of the following generalization.

- (34) The special plural markers associated with neuter nouns and with non-neuter nouns in the 1st and 2nd declensions are realized on the surface in just those forms in which there is no overt case marker.

This statement captures the fact that the special *-a* plural of neuter nouns is found only in the nominative and accusative plural forms, as well as the fact that the special plural forms of the 1st declension and 2nd declension non-neuters (respectively *-j* and *-i*;) are found only in the nominative.

The behavior of most of the relevant forms is captured very simply by the interaction between Kinyalolo's Constraint Generalized (which ensures that the special, lower plural is deleted under the influence of the higher plural in most situations) and the rule of *Number Deletion Under Adjacency* (which is adapted from Collins (2018, 7, his (25))), which deletes the higher plural just when it is adjacent to the lower one. A slight wrinkle in the explanation occurs in the genitive plural in the 1st and 2nd declensions, where the lower and higher plurals end up adjacent to each other given the syntax the fragment assigns to these forms (see (24)), and yet it is the higher plural that surfaces (as *-r*, due to rhotacism). A special additional rule of *N_F:PL Deletion in GenP*, which applies before *Number Deletion Under Adjacency*, is therefore needed.

4.1.3 *An interesting claim (discovery?) about morphological decomposition in Latin*

Morphology as Syntax lacks an operation equivalent to Fusion in the sense of Distributed Morphology. Since it lacks Rules of Exponence entirely, it cannot replace Fusion using Span-based or Phrase-based spell out, in the style of Nanosyntax. While it is not impossible to imitate the effect of Fusion, doing so involves mutually-conditioned allomorphy, which itself can only be achieved in the framework using relatively complicated and specific c-selection restrictions, sometimes in combination with Agree operations which must be stipulated for the individual Lexical Items. In some such cases, deletion operations end up being needed as well. These

properties give the analyst a strong incentive to scrutinize any apparent case of cumulative exponence (fusional morphology), seeking a decompositional solution which will place as much of the burden for accounting for surface variation in forms as possible on the phonology, and as little as possible on the inventory of Lexical Items.

In the course of developing this fragment, these considerations led me to propose a novel decomposition for the Latin noun, repeated here from (2).

(35) **Decomposition of the Latin Noun Proposed Here**
 Stem-Theme-(Num)-**Case**-Num

This decomposition, and the implication that Latin declension is not truly “fusional” at all, strikes me as at the very least interesting, and possibly even correct. While other syntacticist approaches could of course accommodate (35) now that it is on the table, the following consideration seems significant to me. Even though I had been thinking about Latin on and off for around twenty years before commencing this project, and even though I have spent sixteen of those years working in a syntacticizing, piece-based theory of morphology, an analysis of this kind never once occurred to me before I placed myself under the strictures of MaS. Nor, as far as I know, had it occurred to anyone else in the long tradition of grammatical studies of Latin. Skeptics of piece-based approaches to morphology in general may recoil in horror from (35), and take the fact that MaS leads to such results as a searing indictment of the framework as a whole. But I do not share that skepticism, and I would not agree with such an assessment. The fact that some of the core properties of MaS lead one to innovative hypotheses of this kind, for a language which has been subject to grammatical study for a little over two millennia, should be regarded as a great strength of the framework, in my view.

4.2 *The Neutral-but-Noteworthy*

4.2.1 *No escape from Late-ness, No escape from Impoverishment*

The fragment, just like much existing MaS work, has to allow for at least some decisions about pronunciation to be made with respect to an already-constructed syntactic structure: Kinyalolo’s Constraint Generalized, Chain Reduction (to the extent that the latter can’t be reduced to the former), and the two special deletion rules are all cases in point. The criticisms of Late Insertion in Collins and Kayne (2023) must be evaluated with this fact in mind. Morphology as Syntax, like non-realizational approaches generally, says “No” to Late Insertion; but to compensate it must apparently say “Yes” to Late Deletion and Filtering.

A related point applies to their criticism of the Distributed Morphology operation of Impoverishment (Collins and Kayne 2023, 21–22). PHON features are part of the syntactic representation in MaS. This means that ellipsis, Chain Reduction,

and all other syntactic operations that involve marking PHON features for deletion are special cases of Impoverishment: they cause certain features present in the syntactic representation to be ignored by the (morpho)phonological component.

4.2.2 *Inevitable Violations of (a generalization of) the No Tampering Condition*

Collins and Kayne (2023, 117), in discussing the form that Rules of Exponence take in Distributed Morphology (namely, Vocabulary Insertion), say that “it is important to stipulate that this process lies outside of syntax, which is constrained by the No Tampering Condition (*no altering syntactic objects already formed*)” (emphasis mine).

However, the condition that Collins and Kayne have in mind here is actually much stronger than the No Tampering Condition, which is defined by Chomsky (2008, 138) as follows.

(36) **No Tampering Condition**

Merge of X and Y leaves the two SOs unchanged.

Since the No Tampering Condition is a constraint on Merge, it has no bearing on Vocabulary Insertion. The stronger condition to which Collins and Kayne allude, which we might call the *Absolutely No Tampering At All Condition*, does forbid Vocabulary Insertion if the latter is construed as a syntactic operation. But it also forbids a good deal else, including (assuming that PHON features are part of syntax) ellipsis and other marking-for-deletion operations! It seems to me that no theory of morphosyntax worthy of the name could possibly satisfy Absolutely No Tampering At All, MaS included.

4.2.3 *Inevitable Duplication of Formal Features in Different parts of the System*

As another part of their criticism of Distributed Morphology, Collins and Kayne (2023, 16) have this to say about the apparent duplication inherent to Late Insertion (really, any realizational theory of morphology), whereby formal features that appear in syntactic structures also appear as part of the structural description and/or conditioning environments of Rules of Exponence: “For example, suppose the English preposition *to* is defined by the formal feature DAT. Then in DM, there will be a terminal DAT as well as a vocabulary item: $\text{DAT} \leftrightarrow \textit{to}$. All formal features will appear twice in the grammar: in the terminals and in the vocabulary items.”

This last statement of theirs is false: it neglects the role of underspecification, which in the general case will mean that the formal features in Vocabulary Items will be a proper subset of the ones found in the terminals. Nevertheless, we can ask whether such duplication as can be found in realizational theories ought to be held as a point against them, and as a point in favor of MaS.

One of the lessons that the fragment teaches us is that the answer to this question is clearly “no”. As illustrated by the inventory of Dative case morphemes from the fragment, DAT and many other formal features have to occur repeatedly, as part of various Lexical Items, in order to make a MaS analysis of such a system work.

(37) **Inventory of Dative Case Morphemes in the Latin MaS Fragment**

- (LI-25) Case:DAT, PHON:∅; [$\square Num : SG$], [$\bullet np_{class1/5}$]
- (LI-26) Case:DAT, PHON:μ; [$\square Num : SG$], [$\bullet np_{class2/3}$]
- (LI-27) Case:DAT, PHON:i; [$\square Num : SG$], [$\bullet np_{class4,-neut}$]
- (LI-28) Case:DAT, PHON:μ; [$\square Num : SG$], [$\bullet np_{class4,+neut}$]
- (LI-30) Case:DAT, PHON:i; [$\square Num : PL$], [$\bullet np_{class1/2}$]
- (LI-31) Case:DAT, PHON:ibu; [$\square Num : PL$], [$\bullet np_{class3/4/5}$]

I conclude that no real advantage accrues to MaS when it comes to duplication of formal features in the grammar: some amount of duplication of formal features is probably inevitable in any working analysis of a system containing non-trivial allomorphy. Indeed, as we will see in Section 4.3.4, MaS turns out to be at a disadvantage in this domain with respect to realizational approaches, once the possibility of underspecification is taken into account.

4.2.4 *What sorts of accidental homophony should MaS allow?*

The existing literature in the MaS framework contains two positions on the sorts of accidental homophony permitted by the language faculty. The more restrictive of these is that of Kayne (2016), which is also adopted in several of the papers collected in Kayne (2019).

(38) **Kayne’s Anti-Homophony Conjecture**

If X and Y are functional elements and are homophones, then X and Y cannot have the same spelling.

Kayne (2019, 182) clarifies that the mention of “spelling” in this definition is “a stand-in for an appropriate notion of abstract phonology”. Relative to the version of MaS developed in the fragment, the most straightforward way to evaluate this conjecture would be to take “spelling” to mean “phonological Underlying Representation”.

Collins (2020, 6, his (20)) proposes the less stringent position in (39).

(39) **Collins’ “No Accidental Homophony of Case Markers” Condition**

Other than zero forms, there can be no accidental homophony of case markers for a single noun. That is, two case markers cannot be specified in the lexicon as having the same phonological form.

Collins introduces (39) to account for the observation in Caha (2009) that vertical case syncretisms always occupy a contiguous region of the paradigm space (a particular instance of the *ABA generalization which has played an important role in the discussion of syncretism since Bobaljik 2012).

The MaS fragment for Latin noun declension contains a great many instances of irreducible accidental homophony. Leaving aside null morphemes, the method of calculating the number of accidental homophonies introduced in Section 4.3.4 yields 22 of them when applied to the fragment. While it is possible that a way of assigning one member of each of the pairs involved a slightly different UR could be found, it is not at all clear what would motivate this beyond a desire to preserve (38), and any success in such an endeavor would rob (38) of its empirical bite. I conclude that Kayne’s Anti-Homophony Conjecture is not compatible with the facts of Latin as analyzed in the fragment.

However, a slightly adjusted version of Collins’ Condition does turn out to be compatible with the analysis in the fragment. The proposed revisions are presented in italics in (40).

(40) **Revised version of Collins’ “No Accidental Homophony of Case Markers” Condition**

Other than *forms with no segmental phonology*, there can be no accidental homophony of case markers for a single noun. That is, two case markers *with non-distinct subcategorization or Agree requirements* cannot be specified in the lexicon as having the same phonological form, *unless that form is zero or consists only of suprasegmental material*.

The addition of “with non-distinct subcategorization or Agree requirements” is merely a clarification of what Collins’s condition is already designed to do, namely to apply within declension class and number paradigms, and not across them. The other additions are substantive novelties; their necessity is shown by an apparent *ABA violation which arises in the singular paradigm for 4th declension neuter nouns. The problem is illustrated by the following paradigm for the noun *kornu:*, *kornu:s* ‘horn’.

Table 7. 4th Declension Neuter Surface Forms, Unsegmented

Case/Num	SG	PL
Nominative	kornu:	kornua
Accusative	kornu:	kornua
Genitive	kornu:s	kornuum
Dative	kornu:	kornibus
Ablative	kornu:	kornibus

Table 8. 4th Declension Neuter With Proposed Segmentation

Case/Num	SG	PL
Nominative	korn-u- μ - $\emptyset$	korn-u-a- $\emptyset$
Accusative	korn-u- μ - $\emptyset$	korn-u-a- $\emptyset$
Genitive	korn-u- μ s- $\emptyset$	korn-u-um-s
Dative	korn-u- μ - $\emptyset$	korn-u-ibu-s
Ablative	korn-u- μ - $\emptyset$	korn-u-ibu-s

The analysis of the singular forms in this paradigm crucially involves the following two Lexical Items.

(LI-14) Case:NOM, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class4,+neut,-sigmatic}$]

(LI-28) Case:DAT, PHON: μ ; [$\square Num : SG$], [$\bullet np_{class4,+neut}$]

These are accidentally homophonous in a way that is ruled out by (39). The revisions in (40) correctly permit the above system, since both Lexical Items have only suprasegmental material as the value of their PHON attribute.

4.2.5 No unified account of metasyncretism across different domains

It is instructive to compare the general strategy for analyzing case metasyncretism in MaS that emerges from the fragment (recall (29)) with the account of a different metasyncretism found in Collins and Ordóñez (2021, 265, their (44)):

(41) Syntactic account of metasyncretism between 2pl and 3pl in Latin American Spanish:

- a. Latin American Spanish dialects lack the 2pl pronoun *vosotros*, the 2pl clitic *os*, and 2pl possessive forms *vuestro/a/os/as*.
- b. It is not necessary to assume that there is a constraint of the form *2pl ruling out these forms, rather the relevant forms simply don't exist.
- c. 2pl and 3pl are syncretic in those dialects because reference to a plural addressee is only expressed with the imposter¹⁷ *ustedes*.
- d. There is no need for an impoverishment operation.

17. An imposter is an expression which is grammatically 3rd person but is used with 1st or 2nd person reference – see Collins and Postal 2012.

Laying aside the merits and demerits of (29) and (41), the two are clearly very different from each other. I believe that this points to a general property of MaS: it does not give rise to a unified approach to metasyncretism across different morphological domains. This is in stark contrast to many realizational approaches, which do provide such a unified account in the form of Impoverishment rules in Distributed Morphology, or the Rules of Referral in modern Word-and-Paradigm approaches. While some might regard this as a negative property of MaS, I have included it in the “neutral-yet-noteworthy” category here. This is because, for all we know, it could be that the unification pursued by realizational theories is a spurious one. If such turns out to be the case, then MaS has the right of it in keeping the phenomena as they manifest themselves in Spanish person markers and in Latin case markers apart.

4.3 *The Negatives*

4.3.1 *The Nature of Agree*

As noted earlier, Morphology as Syntax commits one to a view of Agree which is not based on valuation. The non-realizational aspect of MaS means Agree can’t feed exponence directly, hence the proposal of Agree-based-checking as part of the fragment. Furthermore, since Agree for specific number features (SG vs PL) plays a crucial role in regulating the distribution of different case markers, it is crucial for the fragment that Agree be construed in such a way that failure to find a matching Goal crashes the derivation.

Unfortunately, both of these consequences are strongly militated against by the behavior of Agree in other contexts, particularly that of phi-agreement, a point made most cogently in the work of Omer Preminger (Preminger 2014, 2021). Insofar as Preminger is correct about this (and I believe he is), I find I must repudiate my own fragment on syntactic grounds: it forces the adoption of an unacceptable theory of Agree.

4.3.2 *Reliance on Strong Case Containment*

The hierarchy of projections assumed by the fragment embodies the hypothesis called Strong Case Containment: nominative is structurally contained in all other cases. This commitment plays an especially important role in the explanation of the nominative/accusative metasyncretism in neuter nouns: the null neuter-seeking accusative marker must take the nominative phrase as its complement for the account to go through. Unfortunately, however, Christopoulos and Zompì (2023) have recently shown that there are good reasons to prefer Weak Case Containment, a theory in which neither nominative nor accusative contains the other, but other cases build on the accusative.

4.3.3 *A Missed Generalization about Case Marking in the Singular vs the Plural*

Looking across the morphosyntactic lexicon of the fragment divided up by case and number (something that the presentation in Section 3.5.2 is designed to facilitate), a striking generalization emerges. Plural-seeking case markers are both fewer in number and in almost all instances less picky than their singular-seeking counterparts as to declension class and gender. In other words, declension class, gender, and case distinctions are reduced in the plural vis-à-vis the singular. This is the sort of generalization that Impoverishment rules in Distributed Morphology can capture very easily, but the generalization is, as far as I can see, inevitably missed in a MaS grammar: it simply stands as a mysterious accident of the composition of the lexicon.

4.3.4 *The Bloat*

The most serious problem for the fragment, as I see it, is what I will call *the Bloat*. My reason for calling it this will become apparent as this section proceeds.

The morphosyntactic part of the fragment contains 41 lexical items, of which 28 are case markers. Of the case markers, all but one must mention what number marking they are compatible with, and most also have to mention what gender and/or declension class features the head NP must have. This means that the Lexical Items themselves tend to be quite complex in the number of features that define them. Combined with the rather large size of the lexicon itself, this means that any feature-counting metric is likely to assign a rather high number to this fragment.

Another issue with this lexicon is the large amount of accidental homophony it exhibits. I propose to count instances of accidental homophony as follows. Each pair of accidentally homophonous items is to be counted once. Hence, a group of two accidentally homophonous items counts as 1, one of three members counts as 3, one of four members counts as 6 (for a group A,B,C,D, the possible unique pairs, order irrelevant, are A+B, A+C, A+D, B+C, B+D, and C+D), and so on. Generalizing, the number of accidental homophonies contributed by a set of items is $N \text{ CHOOSE } K$, with N the number of items accidentally pronounced the same, and K equal to 2.¹⁸ Applying this procedure to the fragment, we find the following sets of accidentally homophonous items, leaving aside the zeros for now.

- (42)
- a. 2 /a/s (= 1 accidental homophony)
 - b. 6 floating moras (= 15 accidental homophonies)
 - c. 2 /m/s (= 1 accidental homophony)
 - d. 2 /s/s (= 1 accidental homophony)

18. For invaluable help in identifying the function I was looking for here, I am indebted to Jonathan Barnes.

- e. 2 /j/s (= 1 accidental homophony)
- f. 3 /i:/s (= 3 accidental homophonies)

This means that there are 22 non-zero accidental homophonies in the fragment. It happens that the fragment also contains 13 zero morphemes. Morphologists are divided on the subject of whether zeroes ought to count as being accidentally homophonous with each other (I'm inclined to say that they should not, but see Stump 2001a for the opposite view). If we do count them, then the number of accidental homophonies in the fragment leaps to 100; 13 CHOOSE 2 is 78.

What is the cause of this Bloat? While it is possible that the fragment could be tightened up to reduce the number of distinct morphemes needed in the lexicon, the most plausible way I can see of doing this at this point would be to unify some existing lexical items by giving them the same phonological Underlying Representation. The problem with this as a strategy is that, while it would indeed reduce *absolute* Bloat, it would not reduce *relative* Bloat. This is because realizational analyses of the system would also benefit from any such consolidation of URs we might achieve.

By far the most important cause of this Bloat is the fact that MaS does not allow allomorphs to compete via the Elsewhere Condition. A realizational analysis could, for example, reduce the number of zeros in the system to one by the simple expedient of having / $\emptyset$ / be the default realization for any feature bundle, and by keeping all overt allomorphs as specified as they already are in the MaS fragment. Similar reductions might be achievable with regard to the non-zero accidental homophonies, but I leave the working-out of such an analysis for future work. The Elsewhere Condition in general allows for radical reduction in the complexity of the statement of the distribution of certain allomorphs, and for radical savings in the amount of accidental homophony in an analysis, precisely because it allows for underspecification and for “default” forms, which appear to pick out non-natural featural classes. Situations in which specific forms with an easily-stated distribution co-exist with default forms which fill out the remaining cells of the paradigm are commonplace in the literature on inflectional morphology. The realizational consensus discussed in the introduction has emerged because of a recognition of such cases as pointing to an important, deep organizing principle of natural language morphology. That organizing principle is captured by the notion that there are Rules of Exponence, that they compete, and that their competition is regulated by the Elsewhere Condition. The Bloat is the weight of living without this notion.

5. Conclusions and Prospects

Morphology as Syntax is a rich framework which is able to account for such morphologically important phenomena as inflectional classes, allomorphy, cumulative and overlapping exponence, and case (meta)syncretism (the latter, with remarkable elegance), all without departing from established tools of syntactic theory. It constrains analyses in interesting ways, an important virtue in any theory, which in the case of the present investigation may be credited with leading to a novel hypothesis (dare I say discovery?) about morphological decomposition in a language as well-studied as Latin. The theory deserves to be pursued, and I believe that people who do pursue it will be led to make important discoveries about the language faculty.

Nevertheless, I will not be among those people. This is because it has long been clear to me (and it seems even clearer in the light of the discussion in Section 4.3) that the core tenets of realizational views constitute a real insight into the nature of grammar, the Elsewhere Condition foremost among them. Pāṇini knew what he was doing.

A happy medium seems to lie in adopting a theory which is like MaS in encouraging the search for decomposition in the face of apparent fusion and in pursuing a reduction of morphotactics to syntax, but which is nonetheless realizational in character. Such a theory would be a version of Distributed Morphology, shorn of all of its post-syntactic operations on the PF side except Impoverishment (which might well be better conceptualized as syntactic, given the representational primitives it manipulates) and Vocabulary Insertion.

I would like to close with an important methodological lesson arising from this exercise. This is the enduring importance of fragment-building in evaluating the workings of a theory (an importance that the earliest work in generative morphology and phonology clearly recognized, as the very existence of Chomsky and Halle 1968 shows). I could easily have misled myself and others into believing that the relative elegance of the account of case metasyncretisms enabled by MaS was representative of the framework, if I had discovered and demonstrated that part of the analysis in isolation. It is only in the context of a comprehensive treatment of a substantial part of the whole system in which those metasyncretisms are embedded that the true cost of living without Rules of Exponence and the Elsewhere Condition reveals itself.

Supplementary files

<https://tinyurl.com/5bw2tw9c>

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