Inquorate Gender in Latin

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1. Introduction

There exists in Latin a small group of nouns which attest different genders between the singular and the plural. A well known example is *frēnum* (‘bridle’), a neuter which in the plural changes to the masculine form *frēnī*. Synchronically, these nouns are irregular, but it is my aim to determine how they came to be that way diachronically by examining the earliest attestations and applying what we know about the history of Latin and Proto-Indo-European.

Gender ambiguity is common in Latin, and much has been written on the subject already. In the following paragraphs I will enumerate some of the previous explanations given for nouns that exhibit gender fluidity.

Some of the nouns in question have two attested plurals, one of which is a different gender from the singular. Sometimes in these cases, as with *locus* (‘place’), the irregular plural is a neuter (*loca* next to regular *locī*). This is often attributed to the Proto-Indo-European collective formation, which denoted a group of inanimate objects (Clackson and Horrocks 2007, 15). For more information on the collective, see §3.2.

When a normally neuter plural has a collective meaning, Zimmerman (1924, 225–26) argues that a contrasting feminine plural provides a count plural[1], as in the neuter plural *caementa* (‘masonry’) versus the feminine *caementae*, which refers rather to the individual stones. Rovai (2012, 101) counters that this explanation has a “heavy teleological burden,” because such a change – filling a gap in a system – runs counter to the way language change is known to work. In his words, “languages change ‘because of’ rather than ‘in order to’ something.”

Nouns that switch between feminine in the first declension and neuter in the second have been said to have undergone a reanalysis due to the homophony between the feminine singular and neuter plural endings (Rovai 2012). In Latin, the **eh$_2$*-stem nouns have replaced the expected *-ā* in the nominative singular with a short *-a* (Weiss 2020, 249) while thematic neuter plurals, which also would have had a nominative ending in **-eh$_2$* in PIE, have instead adopted the athematic neuter ending *-a* (Weiss 2020, 242), restoring a PIE-era homophony between the first declension nominative singular and the second declension neuter nominative/accusative plural. Sihler (1995, 345) points out that this reanalysis was still occurring in late Vulgar Latin and is responsible for some of the words in the Romance languages that differ in gender from their Latin ancestors, such as the feminine French *joie* from the neuter Latin *gaudium*, which was often used in the plural.

Some second declension neuters have masculine plurals, such as the previous example of *frēnum*. A commonly given (Miskell 1959, 163; Weiss 2020, 211; Sommer 1914, 335) explanation for these plurals is Schmidt’s (1889, 6): the thematic neuter nominative/accusative dual ending had become *-ī* and as the dual disappeared, this ending could be mistaken for a masculine nominative plural. In this way, second declension neuter nouns that were frequently

[1] Zimmerman uses the term *„vereinzelnder“ Plural*, literally “singularizing” plural.

referenced in pairs could come to have masculine plurals. For more information on the dual, see §3.3.

Often analogy is proposed as the reason for an irregularly-gendered plural. This can be a reasonable explanation: “in inflected languages endings and suffixes … show clear patterns which can function as models for analogy” (Beekes 2011, 82). As an example, Latin *mūrus* (‘wall’) has a regular masculine plural *mūrī*. In late Latin, an alternate plural *mūra* appears (Adams 2013, 438). Adams (2013, 441) suggests that the neuter plural could be due to analogy with the plurale tantum *moenia* (‘city walls’). While proposals of this sort are common – and I will make some myself in this thesis – it goes against the standard textbook definition of analogy: analogical change is supposed to remove irregularities, not create new ones (Beekes 2011, 78).

Finally, grammarians have long tried to explain examples of gender fluidity as ancient wisdom or having poetic meaning. For example, Corbeill (2015, 43–44) details Servius’ attempts to draw a semantic distinction between feminine singular *insomnia* and Virgil’s use of its neuter plural homophone: the former had the normal meaning of wakefulness while the latter supposedly indicated the things we see while we dream, a claim that Corbeill refutes as “demonstrably incorrect,” adding, “Servius surely was himself aware that the distinction he draws represents more a theoretical ideal than observable linguistic fact.” Gummere (1934) analyzes a similar phenomenon, so-called “poetic plurals,” and argues that they contain no special poetic meaning, but are always chosen in service of the meter. Renehan (1998) argues that “a literary genre can determine gender” and offers as an example the word *tigris*, which L&S point out is normally masculine, but feminine in poetry. Taking the opposing view is classicist G.P. Goold (apud Renehan 1998, 214) who bluntly states, “the fact is that ambiguous genders in Latin have no literary significance but constitute a morphological problem.”

2. Aims and Methods

When a noun has the regular endings of one gender in the singular and those of a different gender in the plural, it is said to belong to an inquorate gender (Corbett 1991, 170–75; 2012, 84–85). I have compiled from grammars and scholarly papers a list of words that exhibit the phenomenon of changing gender when changing number. After categorizing these nouns by the genders they exhibit in the singular and the plural, I have identified four inquorate genders in Latin. They are: neuter singular, masculine plural; masculine singular, neuter plural; neuter singular, feminine plural; and feminine singular, neuter plural.

While it is unreasonable to expect to find a single cause for inquorate gender in Latin, I set out to determine if each of the four inquorate genders had a single cause. For instance, if *frēnum*’s masculine plural can be explained, as Schmidt originally argued, by a vestige of the dual, can all of the other nouns belonging to the same inquorate gender be explained in the same way?

If there is a single cause for each inquorate gender, then clearly not all of the previously enumerated explanations can be correct. For example, neuter plurals to non-neuter singulars, as we have seen, have been attributed to both old collectives and poetic license. If the singular

is feminine, moreover, then we can add a further explanation of reanalysis due to homophony. Indeed, there are more explanations than there are inquorate genders.

As seen in the previous section, nouns exhibiting this phenomenon have been discussed before. However, these discussions have focused on either individual words or a subset. I have not seen a comprehensive treatment of inquorate gender in Latin. It was my hope that by working with a larger corpus, I might be able to see patterns that would have eluded those who limited their research to a subset of the affected nouns.

In the pages below I will examine each of these inquorate genders, and within them each word, individually, compiling what has been said about them and attempting to determine how their inflection came to be irregular. The focus on inquorate gender limits the corpus to words that change gender when number changes, rather than words that show variations of gender within the same number, although as we shall see, this is not always straightforward to determine. I will also restrict my focus to words that exhibit this phenomenon in the earlier stages of Latin. Therefore examples like Latin neuter *gaudium* versus French feminine *joie* are out of the scope of my research.

3. Definitions and Background

3.1. Terminology

Research on this topic has been hindered by a lack of consensus around terminology. In this section I will cover the various terms that scholars have used and how they relate to the subject, and I will argue that the term *inquorate gender* is the only appropriate one.

Many grammars file this feature under the subject “heterogeneous nouns” (Allen and Greenough 1903, 44; Bennett 1908, 33) or “heterogenea” (Zumpt 1877, 81; Matthiæ 1824, 1:128). Priestly (1983, 348–49) defines “‘heterogene’ nouns” as “those belonging to one gender in the singular and another in the (dual and) plural.” More typically, however, the definition of this term is simply “nouns that vary in gender” (Allen and Greenough 1903, 44), making this an umbrella term for a few different phenomena. First, there are nouns, common among the words for animals, which show variation of gender without a variation of form, such as Latin *sūs* (‘pig’) and Greek ἵππος (‘horse’), both of which can be either masculine or feminine (Matasović 2004, 20). Other nouns differ in forms to varying degrees, such as Latin *volgus* (‘folk’) which is normally an irregular neuter with accusative *-us* but occasionally found as a regular masculine, and the Latin word for ‘cheese’ which can be masculine *cāseus* or neuter *cāseum* (Matasović 2004, 50). Finally, there are the words on which we will focus, in which gender varies between the singular and plural forms.

Occasionally words of this type are lumped in with heteroclites, but this is not satisfactory. In grammars, this term refers to words that vary in stem form (‘heteroclite’ is a compound of ἕτερος ‘another’ and κλίνω ‘to inflect’) (Allen and Greenough 1903, 43). While some of the words we

are concerned with do indeed change declension along with gender, such as the second-declension neuter *balneum* which becomes a first-declension feminine *balneae* in the plural, this is not always the case. Additionally, for Indo-Europeanists, the term is even more specialized, referring to stems with final consonants that vary between the strong and weak cases, such as *r/n*-stems (Fortson 2010, 123).

Matthiæ (1824, 1:128–30) uses the term μεταπλασμὸς γένους to describe when nouns "have, in the plural, a different gender and termination from those in the singular," and Rovai (2012, 94) defines metaplasm (the anglicized borrowing, by way of Latin *metaplasmus*) as "gender shift which is paralleled by a shift in the inflection class." This term is unworkable for two reasons. First, it is overly specific, requiring the words to be heteroclitic. Second, within linguistics, the term metaplasm is overly broad, defined as "the alteration of a word by addition, removal, or transposition of letters or syllables" (OED s.v. "metaplasm, n. 1").

A similar phenomenon exists today in some of the Romance languages, where the nouns exhibiting it are sometimes referred to as ambigeneric. For instance, French *amour* ('love') and Italian *centenaio* ('quantity of 100') are both masculine in the singular and feminine in the plural (Corbett 1991, 172; Priestly 1983, 348). These 'ambigenes' are particularly widespread in Romanian, where they form a large class of nouns (Maiden 2016; Igartua 2006)**.** As Priestly (1983, 348) points out, however, this term is not accurate in languages with more than two genders. Unfortunately, he prefers the term 'heterogene' which, as previously noted, is too broad.

The ambigenes of Romanian, which has only masculine and feminine gender, are masculine in the singular and feminine in the plural, a situation that arose via language change: the Latin second declension masculine and neuter singular collapsed together, and the first declension feminine singular and second declension neuter plural had the same ending. Over time the neuter plurals were reanalyzed as feminine, while in the singular they were now masculine (Fellner 2014, 15–16). A similar situation arose in Tocharian, and this is given the term 'genus alternans' (Igartua 2006; Fellner 2014, 16). Igartua, however, argues that this term is to be restricted to cases like Romanian and Tocharian, and not be applied to languages with small sets of nouns with irregularly alternating gender.

Corbett (1991, 145–54), pointing out that "the use of terms in this area has become confused," argues the need to distinguish between what he calls controller genders, "the genders into which nouns are divided," and target genders, "the genders which are marked on adjectives, verbs, and so on." In this system, the 'genus alternans' languages Romanian and Tocharian show three controller genders but only two target genders. Like Igartua, he distinguishes between heterogeneous nouns such as those in Romanian and those in Italian and French: the genus alternans nouns "are counted in hundreds and not in ones and twos" (Corbett 1991, 170). For those that are "counted in the ones and twos," he uses the term 'inquorate genders' which can be defined as noun classes consisting of a small number of nouns and with an unusual combination of agreement forms that already exist for nouns with regular genders; for example,

the forms of one regular gender in the singular but a different regular gender in the plural (Corbett 1991, 170–75; 2012, 84–85).

Of the terms we have examined, only ‘inquorate gender’ accurately and specifically refers to the phenomenon of irregular nouns that differ in gender when they differ in number, and it is the term that I will use going forward. I will organize the irregular nouns by controller gender, and then treat them individually. First, however, I will discuss two concepts within Proto-Indo-European that feature heavily in the proposed origins of some of our irregularly-gendered plurals: the collective and the dual.

3.2. The collective

It has long been noted that the Indo-European neuter plural had an unusual feature: in Greek and Avestan it triggered singular agreement on the verb, known as the “τὰ ζῷα τρέχει rule.” When Hittite was deciphered, it was found to have the same feature (Prins 1997, 1). The presence of this agreement pattern in three separate branches solidly dates this oddity to the proto-language.

Verbal singular agreement to a plural noun was limited to neuter plurals in the oldest attested writings. Clackson (2007, 101–2) notes that it is not merely the animacy or inanimacy of the referent that matters: inanimate nouns with a non-neuter gender trigger plural verb agreement when the nouns are plural. Additionally, Schmidt (1889, 2) noted that even if a masculine or feminine plural noun was conceptually viewed as a unit, it still triggered plural verb agreement. He proposed that the reason for this singular agreement is that what is synchronically the neuter plural was originally a singular collective. Since then, this has been the commonly accepted view, although scholars disagree on the details.[2]

The collective “indicated a collection of entities treated as a unit” (Fortson 2010, 113). It was characterized by the suffix **-h_2*, although this is not always visible, as in **u̯ód-r̥* (‘water’) which has a collective **u̯éd-ōr* (‘quantity of water’) where some believe an original **-h_2* has disappeared and lengthened the preceding vowel due to Szemerényi’s Law (Nussbaum 2014, 296–97; Lundquist and Yates 2018, 2084–85).[3] This suffix was originally derivational rather than inflectional (Harðarson 2015, 2–3). This can be seen in collectives that are formed from non-neuter nouns, such as Hittite *alpa* (‘cloud cover’) formed from the common noun *alpaš* (‘cloud’), Latin *loca* (‘region’) formed to masculine *locus* (‘place’), and Greek μῆρα (‘thigh bones’) formed to masculine μηρός (‘thigh’) (Justus 2002, 135–36)[4]. Another well-known example is the Greek κύκλος (‘wheel’) which has a normal masculine plural κύκλοι as well as a neuter plural κύκλα. For these, Eichner (1985, 142) gives examples from the Iliad illustrating contrasting meaning: κύκλοι referred, for instance, to hoops on a shield, while κύκλα referred to a set of

[2] See, however, Melchert (2011) for an opposing view.
[3] Kortlandt’s (1975, 84–85) alternate explanation that the long *o* is due to lengthening before a word-final resonant would imply that this is not originally a collective, but a separate formation.
[4] See Nussbuam (2018), however, for a convincing argument that μῆρα is not a collective, but rather the plural (to an unattested singular) of an archaic “genitival” derivative of μηρός.

wheels that completed a utilitarian function. As further evidence that this was not merely arbitrary gender switching, Schmidt (1889, 5) points out that while many masculine singulars can have neuter plurals in Greek, the opposite does not occur.[5]

Over time this **-h_2* ending was reanalyzed as inflectional morphology and incorporated into the neuter paradigm, becoming the nominative, accusative, and vocative neuter plural endings, although there is disagreement on how exactly this occurred. Luraghi (2009) argues that the **-h_2* suffix originally derived abstract nouns, which came to be collectives through a semantic shift, and then became grammaticalized as neuter plural case endings. Kortlandt (2017) assumes that the suffix, which he gives as **-H*, formed a "collective predicative" which was later extended to abstract nouns. In Nussbaum's (2014) view, collectives were formed in a two-step process whereby the singular nouns were first converted to possessives which were then turned in to collectives via the **-h_2* suffix. Of particular interest for §4.2 is the process for creating these possessives from o-stem nouns, which he writes was through internal derivation, or "derivation through accent shift and not affixation" (Clackson 2007, 85). This argument would explain why it is typically in o-stems (e.g. Hittite *alpaš*, Latin *locus*, Greek μηρός) that we see neuter plurals to non-neuter singulars that are attributed to old collectives: nouns of other stems would exhibit either suffixation or ablaut in their possessives, while o-stems would have merely had a shift of accent that would be largely hidden from us today.

In order to help determine which neuter plurals may be old collectives, we need to know when collective formations ceased to be productive. It would seem logical that they were no longer productive at the time that the derivational suffix was reanalyzed as nominal inflection. This may have been the case in Hittite, where it is claimed that the collective was once a "living category" (Melchert 1983, 144), but it had died out by the time of New Hittite where, as in the other daughter languages, the neuter plural used the old collective endings (Hoffner and Melchert 2008, 69).

Had collective formations still been productive in Latin and Greek, one would expect more neuter plurals to non-neuter singulars than the handful of examples we see today. In Latin, however, there is evidence that the collective may have continued to be productive in at least some registers, or that it again became productive after a period of dormancy. While the neuter plural to words like *locus* was "hardly a productive variant" of the masculine plural in the classical language (Adams 2013, 448), there are multiple neuter plurals to masculine nouns found in the Vindolanda tablets (dated to the early second century CE) which refer to either vehicles or "weakly differentiated" objects, that is, those "without individual characteristics" (Adams 2013, 416). The authors of these tablets "would not be described as belonging to the upper-class elite" (Adams 2013, 19). Additionally, there are late attestations of collective-seeming neuter plurals such as *digita* to masculine *digitus* ('finger') and *mūra* to masculine *mūrus* ('wall') (Adams 2013, 18–19, 437–48). While the late appearance of these forms leaves them out of scope for my research, it is worth keeping them in mind.

[5] στάδιον ('unit of measurement; race course') does have a masculine plural, which Schmidt acknowledges, but he attributes it to substantivization.

When a neuter plural to a non-neuter noun is proposed to be a collective, as is often the case, we must look at the etymology of the noun and the timing of the attestation to determine if a collective explanation is reasonable. Because of the unexplained late attestations of other gender-switching neuter plurals such as *digita* and *mūra*, however, there will always be some uncertainty.

3.3. The dual

In addition to the singular and the plural, and the collective if it is to be included, Proto-Indo-European had a dual number which referred to pairs of objects. It was mostly or completely lost from several branches in prehistoric times (Clackson 2007, 115). In Latin, it only survives in fossilized forms such as *ambō* (‘both’) and the numbers *duo* (‘two’) and *vīgintī* (‘twenty’) (Weiss 2020, 211).

Schmidt (1889, 6) proposed that the irregular masculine plurals *frēnī* and *rāstrī* to neuters *frēnum* and *rāstrum* were also dual forms in origin, and this argument could be extended to other second-declension neuters with unexpected masculine plurals. This is because the masculine plural nominative ending *-ī* shows the same outcome as the neuter dual nominative/accusative ending. As the dual ceased to be productive in Latin, speakers could have re-analyzed these forms as being their homophonous masculine plural counterparts.

The PIE thematic masculine nominative plural was **-ōs* from earlier **-o-es*, but Latin has replaced this with *-oi̯* from the pronominal endings (Weiss 2020, 222). From there, this ending first became *-ei*, then *-ē*, and finally *-ī*. Each of these stages is attested (Weiss 2020, 240).

The thematic neuter dual nominative-accusative ending was **-o-ih₁*, as seen in Sanskrit *yugé* and Greek ζυγώ, both meaning ‘two yolks’ (Beekes 2011, 217). This ending also would have had an initial Latin outcome of *-oi̯* (Weiss 2020, 211). This unfortunately means that earlier attestations will not help us to discern a neuter dual from a masculine plural for thematic nouns in the nominative case. Whereas an athematic neuter dual, with a PIE ending of **-ih₁*, would show a Latin nominative ending of *-ī* at the earliest stages, a thematic neuter dual’s nominative ending would undergo the same sound changes at the same times as the thematic masculine plural ending.

For this reason, we will instead need to rely on semantics and context to assess the claims of masculine plurals originating from neuter duals.

4. Corpus

4.1. Neuter singular, masculine plural

4.1.1. caelum - ‘sky, heaven’

There are two homophonous *caelum* lexemes in Latin. One is the word for sky or heaven, and the other is the word for chisel. Only the first is irregular and will be considered here. According to EDL and LEW, the word for sky is always the masculine *caelī* in the plural, although attestations of this plural are rare (Garcia de Diego López 1947, 62) and L&S claims it is only poetic. The picture is complicated, however, by the existence of a masculine singular form *caelus*.

In a detailed thesis, Miskell (1959, 49) points out that the neuter form was more common, and that all but one of the instances of *caelus* in early Latin were personifications. This personification apparently referred to the deity “Father Sky” and was potentially analogous to the Greek god Οὐρανός (Corbeill 2015, 64), whose name is also identical to the word for sky. Despite the higher frequency of the neuter form, Miskell (1959, 169–70) declares that the existence of the masculine singular form is sufficient to explain the masculine plural. Scheller (1838, 60) concurs, arguing that if *caelī* were the plural for *caelum*, Cicero (*Letters to Friends* 197.4) would have written *innumerābilēs* instead of *innumerābilia* in “*te putābat quaesītūrum ūnum caelum esset an innumerābilia*” (“...thought you would be enquiring whether there is one sky or an infinite number”). Skutsch (1985, 183), meanwhile, sees the fact that the plural is always masculine as proof that *caelus* is the original singular form, but that “literary and educated language had long before Ennius firmly decided in favor of the neuter.”

Rovai (2012, 100) argues that the two singular forms *caelus* and *caelum*, as well as those of other second declension masculine/neuter doublets such as *corius/corium* (‘skin, hide, leather’), should not be considered separate genders, but rather separate cases. In his view, the form referred to as neuter is actually the accusative case of the masculine form and is used in non-agentive contexts. Over time, he says, these accusative case forms replaced the nominative forms even when they represented subjects, leading to the creation of the second declension neuter forms. He cites the solely masculine plural *caelī* as evidence for this, but does not account for the regular neuter plurals seen in the other doublets. This is an intriguing way to explain the *caelus/caelum* doublet, but it is insufficient to explain the masculine plural.

Gaius Caesar declared that *caelum* should never be used in the plural, but by this time it had already been used by Lucretius (II.197-198): “*quis pariter caelōs omnis convertere et omnis ignibus aetheriīs terrās suffīre ferācis*…” (“who to turn about all the heavens at one time and warm the fruitful worlds with ethereal fires…”). There is another potential pre-Gaius attestation in a fragment of Cicero’s *Hortensius* (Weiss 2012, 163).

Leumann (1977, 423) and Wackernagel (1924, 46) both state without further explanation that *caelī* is due to the Koine Greek οὐρανοί. Weiss (2012, 165) rejects this suggestion due to the above attestation of the masculine plural in Lucretius. LSJ states that οὐρανός is "never used in pl. by classical writers" and gives an attestation in Psalm 96 of the Septuagint, but this ignores multiple uses of the plural by Aristotle. In *Physics* (IV.X.218b.4-5), for example, he writes "ἔτι δ' εἰ πλείους ἦσαν οἱ οὐρανοί…" ("Moreover, if there were more universes than one…") Lucretius, a philosopher, would certainly have been familiar with the writings of Aristotle. It would be easier, however, for οὐρανοί to explain the later Christian usage of *caelī* than the usage employed by Lucretius. A Christian writer may be compelled to defer to Greek Biblical tradition, but why would Lucretius use the gender of οὐρανοί as a model for *caelī* to refer to multiple universes?

Weiss (2012, 165–69) proposes that, like other second declension neuter nouns with masculine plurals, the plural represents an old dual form. He provides three potential sources for this dual. First, he draws a comparison to Near Eastern religions that have the concept of dual heavens. In this context he then reinterprets a sentence from Varro's *On the Latin Language* (5.16), "*caelī dīcuntur loca supera et ea deōrum, terrae loca īnfera et ea hominum*," from a conventional translation ("the places of the sky are called '*loca supera*' and these are of the gods, the places of earth are called '*loca infera*' and are of men") to have the following meaning: "the heavens (caeli nom. pl.) are (i) the loca supera and (ii) those of the gods, and the earths are (i) loca infera and (ii) those of men." Because of this bipartite division of heaven, he argues, *caelum* would have been commonly used in the dual. One issue with this proposal is that because the earth, or *terra*, is also bipartite in this interpretation, it should also have been referred to in the dual. The **-eh$_2$*-stem dual nominative ending was **-ih$_1$* (Beekes 2011, 216–17), so adding it to an **-eh$_2$-* would give a Proto-Italic **-ai*. In the Latin period this ending becomes *-ei*, then *-ē̯*, before finally settling on *-ī* (Weiss 2020, 130). This means that if a dual of *terra* had survived in a fossilized form, it would likely have eventually wound up, as *caelum*'s did, being reanalyzed as a masculine plural. It is of course possible that if *terra* had originally been referred to in the dual, and Italic then lost the dual number, instead of fossilizing a dual form (e.g. *vigintī*), the form could simply have been replaced with the regular plural *terrae*, particularly if *terra* was a commonly used noun. However, the separate treatment of *terrae* from *caelī* leaves at least some room for doubt in this proposal.

Secondly, Weiss proposes that *caelī* could have originally been an elliptical dual referring to "heaven and earth." Latin is already known to have an elliptical "dual" in the plural form *Castorēs*, referring to Castor and Pollux. Weiss points out that in languages which have lost the dual number, such as Latin, the elliptical duals instead become elliptical plurals, as seen in *Castorēs*. The same could be said to have happened to *caelī*, but in this case, because the neuter dual ending had been reanalyzed as a masculine plural, it simply became irregular. Over time the elliptical meaning would have been lost.

Weiss' third proposal is that Latin origin mythology has the universe split into two halves, *caelum* and *terra*. This, he says, could explain why *caelum* uses the dual for its non-singular form. He then offers a new etymology for *caelum* that relates it to its 'chisel' homophone: a noun showing

the resulting state of “severing the earth from the sky.” While the new etymology is appealing, this proposal has the same issue as his first one: why is only *caelum*’s plural affected and not *terra*’s?

In the absence of a compelling reason for Lucretius to model a plural for *caelum* after the masculine οὐρανοί, Weiss’ dual explanation is the most suitable. Because two of his three proposals need to explain why *terrae* did not have an irregular outcome, the idea that *caelī* is in origin an elliptical dual is perhaps the most straightforward.

4.1.2. clātrum - ‘lattice, grate’

Zumpt (1823, 48) lists this under alternate spelling *clāthrum*, but *clātrum* is the original spelling. It is a loan from Doric Greek κλᾱ́θρον first attested in Cato, and because Latin lacked aspirated stops, Greek words were borrowed with unaspirated spelling and pronunciation until educated Latin speakers began spelling and pronouncing the aspiration of these loanwords in the second century BCE (Leumann 1977, 159–60). L&S (s.v. clāthri) also uses the newer spelling, but shows it as being a plurale tantum. Karlsson (2000, 648–49) defines several categories in which pluralia tantum recur cross-linguistically, and lists *clāthri* under “nouns denoting tools and (more or less) technical devices” along with common examples like English “scissors.” The original Greek word, which is not a plurale tantum, has the meaning “a bar for closing a door” (LSJ s.v. κλεῖθρ-ον) so it is possible that a plural was directly borrowed in to Latin with a meaning something like “many bars forming a lattice.”

Why then does Zumpt consider this word to be heterogeneous? Leumann (1977, 69) writes that *clātri* is a masculine plural to an unattested neuter **clātrum* and compares the situation to that of *rāstrum* (see below). Apparently the neuter gender of the singular is assumed due to the gender of the Greek ancestor. Indeed, neuter plural *clātra* is also attested, as in Propertius’ *Elegies* (4.5.1) “*cum fallenda meō pollice clātra forent.*” However, the only other early attestation is in Flavius Caper’s *De Verbis Dubiis* (108.16-17), where he states that the neuter is incorrect: “*clātrī hī, nōn haec clātra.*” To complicate matters, the masculine is attested much earlier, in Cato’s *De Agricultura* (14.2) “*clātros in fenestras māiōris bipedālis X*” (“10 two-foot lattices for the larger windows.”)

LEW (s.v. clātrī), implying that the neuter plural is older, says that the gender switch is patterned after *cancellī*, which is normally used in the plural and has the same meaning (L&S). This seems reasonable if one assumes that the neuter, despite its later attestation, is the original form, which seems likely due to the gender of the Greek source. However, due to the lack of attestation of the neuter singular, it isn’t clear that this is a case of inquorate gender rather than simply a plurale tantum which changed genders.

4.1.3. frēnum - ‘bridle’

This word is always neuter in the singular, but has both a masculine plural *frēnī* and a neuter plural *frēna*, both of which are attested early (Miskell 1959, 24)**.** Some post-Latin grammarians (e.g. Scheller 1838, 60) assume that the unexpected masculine plural must have come from a

rare masculine **frēnus*, but this is not only unattested, but debunked by Flavius Caper in the second century CE: "*frēnī hī et haec frēna et hoc frēnum: nam hic <frēnus> non est.*"

Schmidt (1889, 6) famously proposed that the masculine plural is in origin a neuter dual, but did not elaborate as to why the word have have been used in the dual frequently enough for that reanalysis to occur. Weiss (2012, 165) attempts to provide an explanation: using 'reins' as the definition rather than the more commonly given 'bridle,' he suggests that the dual form would have been the unmarked number for something that commonly came in pairs.

While *frēnī* is the more common plural (EDL), *frēna* is normally poetic (L&S). When poets use the plural, they usually opt for *frēna* due to the better metrical utility of the neuter plural form; Virgil, in fact, only uses the masculine once and it, too, is for the sake of meter. Many of these uses of *frēna* are the poetic plural; in other words, plural in form but singular in meaning (Gummere 1934, 23).

DGRA (s.v. frenum) claims that the plural *frēna* is used to refer to "the whole bridle," but does not mention *frēnī* at all. Gummere (1934, 23) says that *frēna* came to mean 'reins' and that "the plural is poetic unless it refers to bits in general, or to several bits."

The singular *frēnum* does not appear until Horace. Cicero uses it twice in letters and in both cases he is obviously referring to the bit, as in 412 (XI.24) "*frēnum memordī*" ("I have taken the bit between my teeth"). He also uses the masculine plural; in *Pro Milone*, the Loeb edition (p. 76-77) translates it as a true plural: "*Scūtōrum, gladiōrum, pilōrum frēnōrum etiam multitūdō dēprehendī posse indicābātur*" ("It was hinted that vast stores of shields, swords, javelins even bridles might be seized"). Yet in *Topica* it is translated (again by the Loeb edition, p. 408-409) as a poetic plural, a singular bridle: "*homō, nāvis, mūlus clītellārius, equus, equa quae frēnōs recipere soleat*" ("man, ship, pack-mule, stallion, mare which is customarily used with bridle").

Complicating matters is another noun, the feminine *ōreae*, meaning "the bit of a bridle" (L&S). Attested in the Old Latin period, it is a plurale tantum with a singular meaning. Festus (182.56) writes "'*Ōreae,' frēnī quod ōrī īnferuntur*" ("'Oreae,' the bit of a bridle which is introduced into the 'os'")[6] and then cites usages in ante-classical authors Titinius and Naevius. The existence of *ōreae* may imply that there was something conceptually about a bridle that caused Latin speakers to refer to it with plural forms. For the same reason as with *terrae* (see §4.1.1), it is not possible to assume that *ōreae* was reanalyzed from a duale tantum. This in turn weakens the argument that *frēnī* originated in a dual.

Miskell (1959, 163) claims that the neuter plural *frēna* "is secondary and built on the neuter singular." However, given the later attestation of *frēnum*, the generally poetic usage of *frēna*, and the old plurale tantum synonym *ōreae*, it could be the case that *frēnī* was in fact the original form, that *frēna* was created for poetic meter, and that *frēnum* was in turn formed from that.

[6] Translation by Warmington in LCL 314.

4.1.4. porrum - ‘leak’

Both neuter *porrum* and masculine *porrus* are attested (L&S). The neuter singular and masculine plural *porrī* are the common forms. The neuter plural *porra* is more recent (Miskell 1959, 32, 166). Unlike the other second declension words belonging to this inquorate gender, I have not seen any attempts to explain the masculine plural as a vestige of the dual, and the semantic motivation for this is lacking.

This is likely because in this case, the masculine *porrus* is clearly the older form. According to LEW, *porrus* has been attested since Lucilius. It also appears in Fronto’s correspondence with Marcus Aurelius as a quote from Laberius, who wrote in the first century BCE. The neuter *porrum*, meanwhile, does not appear until the first century CE.[7] The masculine plural is first attested in the Old Latin period, in a fragment of Lucilius. Miskell argues that, due to the masculine plural and the attestation in Laberius, the masculine is original, and that if instead the neuter were original, it would be difficult to explain the forms.

Miskell proposes the neuter *cēpe* (‘onion’, more commonly listed as *caepe*) as an analogical model for the neuter singular. Furthermore, since *cēpe* is not used in the plural, he suggests that this is the reason the masculine plural remains (Miskell 1959, 166–67). Indeed, there are multiple attested pairings of *porrus/porrum* with *caepe*. In Horace (*Epistle* XII.21) we see “*seu piscis seu porrum et caepe trucīdās*” (“Whether it is fish or only leeks and onions that you butcher”). This pair again shows up in Juvenal (*Satire* 15.9): “*porrum et caepe nefās violare et frangere morsū*” (“It’s a violation and a sin to crunch your teeth into a leek or an onion”). While neither of these examples allows us to determine the gender of *porrus/porrum*, the repeated pairings of the two nouns lend support to Miskell’s theory that the gender of *porrus/porrum* could be analogically shaped by that of *caepe*.

4.1.5. rāstrum - ‘hoe, rake’

The plural *rāstri* is the other of two masculine plurals to neuters that Schmidt (1889, 6) theorized as originating in a neuter dual. Before this, the plural was sometimes explained as having come from an alternate masculine singular *rāster* (see e.g. Scheller 1838, 60), but while many dictionaries list this form, it does not actually appear to be attested. White (1967, 52) comments “the form **raster* seems to have been inferred erroneously from the pl. *rastri,* and commonly appears as the standard form in the dictionaries of antiquities.”

The plural form is normally used instead of the singular (L&S), and while both neuter and masculine plurals are attested, the neuter does not appear until the classical period (Miskell 1959, 33). In fact, even the singular does not appear until Ovid; in Old Latin, *rāstrī* was a plurale tantum (Weiss 2012, 165; 2020, 212). It is frequently translated as singular, for example in Terence *The Self-Tormenter* (931): “*Menedēme, mihi illaec vērē ad rāstrōs rēs redit*” (“Menedemus, it really will be the hoe for me.”) The Loeb edition rephrases this as “I shall be

[7] Miskell (1959, 32) claims that the neuter singular first appears in Horace, but this form is accusative and thus the gender cannot be distinguished from that of the masculine singular.

reduced to laboring to earn my living," and Weiss notes that "*ad rāstrōs* meant 'to the drag-hoe,' not 'to the drag-hoes'" (Weiss 2012, 165).

There are six early attestations of the plural *rāstrī* in which a clear masculine gender can be observed (Miskell 1959, 33). It is worth noting that in five of these examples, the noun is in the accusative case, *rāstrōs*, the desinence of which has no homophony with the nominative/accusative neuter dual ending. In order for a reanalysis to occur due to homophony, the noun would have needed to be used often in the nominative case. The only early example of nominative *rāstrī* appears in Varro (*On the Latin Language* V.136), and there is no obvious dual meaning intended: "*Rāstrī, quibus dentātīs penitus ērādunt terram*" ("Rastri 'rakes' are sharp-toothed instruments by which they scratch the earth deep").

Weiss (2012, 165) argues that the plurale tantum *rāstrī* originated from a duale tantum that "refers to the two teeth of the typical drag-hoe," but two teeth may not be as typical as implied. Gaffot (1934 s.v. raster) notes that they had two or more teeth. DGRA (s.v. rastrum) notes a distinction between two- and four-tined *rāstrī*: the four-tined model, or *rāstrum quadridēns*, is a rake, while the two-tined model, or *rāstrum bidēns*, is a hoe or mattock. Further, they state that without the qualifying adjective, the four-tined tool is normally what is referred to, and when the two-pronged tool is meant, it is usually referred to as *bidēns* alone rather than *rāstrum bidēns*. They do, however, offer two pieces of evidence against this. First, Virgil (*Georgics* I.94) writes "*rastris glaebas … frangit inertis*" where he speaks of breaking up clods of dirt, which is done with a hoe rather than a rake. Second, Cato explicitly names *rāstrōs quadridentēs* as necessary tools for both an olive garden (10.3) and a vineyard (11.4), although he may have merely been trying to avoid any possible ambiguity.

The use of the substantive *bidēns* to refer to a two-pronged hoe or mattock dates to at least Lucretius in the classical period (L&S). In his book on Roman agricultural tools, White (1967, 52) lists *bidēns* separately from *rāstrum*, the latter of which he reserves for four- and six-pronged varieties. An earlier attested form is *duidēns* (according to Festus as summarized by Paul the Deacon) but this form apparently only referred to an animal with two teeth (Weiss 2020, 389). It is possible, then, that in the earlier language, *rāstrī* referred to rakes in general before shifting semantically to the more specific four-or-more-pronged instruments when *bidēns* came to denote the two-pronged variety. But this does at least cast some doubt on Weiss' assertion that *rāstrī* originated as a duale tantum. Furthermore, if *rāstrī* had been a plurale tantum until the classical period, why when a singular form was created would it be the neuter *rāstrum* instead of a masculine like the plural? Miskell (1959, 167) states that there is a secondary masculine singular, but does not provide any examples. Perhaps when a singular was created, it took the form *rāstrum* in analogy with other neuter instrument nouns, particularly agricultural tools such as *arātrum* ('plow') and *rutrum* ('shovel').

A neuter plural exists, but it is secondary as well (Miskell 1959, 167).

4.1.6. siser - ‘skirret (a root vegetable)’

As a third declension neuter, this is the only member of this inquorate gender that is not in the second declension, although it is not clear that “neuter singular, masculine plural” is actually the correct inquorate gender for this noun. According to L&S, it has a masculine plural *siserēs*, while Gaffiot (1934) claims that it is feminine. However, this plural is not attested until Pliny (first century CE), and Varro (in *On the Latin Language*) reports that *siser* has no plural. The late attestation of this plural puts it out of scope for this research.

4.2. Masculine singular, neuter plural

4.2.1. acinus - ‘grape’

This noun is supposedly attested in all three genders. The neuter is normally found in the plural (L&S). Due to a fragment of an earlier author in Nonius, Zimmerman (1924, 224–28) believes that the masculine *acinus* is the original and that the neuter plural has a collective meaning. He admits, however, that even Cato uses *acina* in a non-collective sense, referring to individual berries in *De agri cultura* 112.3 right after using it in a collective sense in 112.2. In fact, Schön (1971, 57–60) points out that the masculine plural is not even attested until the first century CE, and that if it had existed before then, Cato would have used it. In other words, *acina* was the only plural for *acinus* in Old Latin.

Schmidt (1889, 9–10) uses the presence of the feminine as evidence for his argument that the neuter plurals to masculine singulars were originally feminine singulars with a collective meaning. This evidence is extremely thin, however, since the feminine has only a single controversial attestation in Catullus 27.4, with scholars arguing whether the word should be the masculine *acinō* or the feminine *acinā* (Thomson 1997, 116, 273–75). Zimmerman (1924, 224–28) prefers the feminine reading and gives as evidence many neuter plurals with corresponding feminine forms, such as the previously mentioned *caementum/caementa*, which he had argued was a way to form count plurals from collectives. It is not clear, however, why a new form for count plurals would have been needed if *acina* could already be used in this way, as it was by Cato.

Sardinian, supposedly a very conservative Romance language that preserves various archaisms from Latin, has a feminine noun *ákina* with a collective meaning of “grapes.” This is often cited as further evidence of a collective origin in Latin. Adams (2013, 440–41) strongly rejects this, claiming that it is a recent development within Sardinian and stating that there are no early attestations of *acina* in a collective sense, even in the aforementioned Cato 112.2, which he describes as a straightforward plural. He forcefully rejects the Sardinian evidence, concluding “misinformation has thus been handed down in the Romance literature. However the use of the word in Sardinian is to be explained, it cannot be claimed as an archaic relic dating back to the early Republic” (Adams 2007, 401).

According to EDL, the etymology of this word is uncertain. While it is “generally regarded [as] a loanword from an unknown Mediterranean language,” De Vaan derives it from the same root as *acu-* (“sharp”) due to the bitterness of the seeds. *Acu-* comes from the PIE **h2eḱ-u*. A PIE etymology for *acinus* would make a collective explanation potentially sound, but with no known cognates it is not possible to assess the age of the noun to evaluate the chronological feasibility. However, an alternate explanation may exist: There are several doublets within Latin and Greek where a feminine noun for a tree is paired with a neuter noun for its fruit, such as ἄπιον (‘pear’) vs. ἄπιος (‘pear tree’) and *cerasum* (‘cherry’) vs. *cerasus* (‘cherry tree’) (Sihler 1995, 345). It is conceivable that *acina* could have been used to denote grapes by analogy with this pattern. The paucity of early attestations for this noun in the singular makes it difficult to argue for or against this, however.

4.2.2. balteus - ‘belt, girdle’

L&S states that *balteus* is the normal form, but that *balteum* is also attested, and that the plural *baltea* is used in poetry and pre-classical prose. Schmidt (1889, 6) includes *baltea* in his list of collective formations, but I have not found anyone else making this claim.

The etymology of this word is uncertain. Varro claimed it to be a Tuscan loanword. Some scholars have historically doubted this, including L&S, due to the similarity to semantically close Germanic words including the English *belt*. It is now believed, however, that the Germanic words were borrowed from *balteus* (EDPG s.v. baltja-).

The initial *b* in *balteus* is noteworthy. Proto-Indo-European **b* was rare, particularly root-initially (Weiss 2020, 37). **b^{h}* could also yield Latin *b*, but not word-initially, where it instead yielded an *f* (e.g. **b^{h}reh$_2$tēr* > *frāter*) (Weiss 2020, 82). Initial **dų* also became *b* (see *duenos* > *bonus*) (Weiss 2020, 174) but a potential etymology with this form is lacking. Finally, initial **ml* becomes *bl* (Weiss 2020, 180). For a belt made of leather, there is a semantically attractive root with **mleh$_2$* (“to weaken”, cf. Sanskrit *mlātá-*, an adjective describing softened or tanned leather, from **mleh$_2$-to*) (Lubotsky 2017, 1876), but it is not straightforward to derive a form with the shape of *balteus* from it. The initial *b* therefore lends support to the claim that *balteus* is a loanword, which in turn makes a collective reading of *baltea* unlikely unless collective formations were still productive at the time the word was borrowed into the language.

So what are we to make of the neuter plural? Miskell (1959, 19–20) doubts the reliability of the early attestations, particularly of uses of the word in the singular, making it unclear whether the masculine *balteus* is the correct early form. Even if these attestations are correct, it is possible that the variation in gender is due to “the difficulty in adapting a foreign word to the Latin declensional system” (Miskell 1959, 13). In other words, borrowing a strange word into Latin could have caused initial confusion resulting in both masculine and neuter genders co-occurring in both the singular and plural.

4.2.3. clīvus - ‘slope, hill’

L&S state that *clīvus* is a masculine singular with a neuter plural, making no mention of a masculine plural or neuter singular. Schmidt (1889, 6) calls *clīva* a collective, and Eichner (1985, 146) names plurals *clīva* and *clīvī* in his list of double plurals that supposedly once distinguished between collective and count plural, but cautions that, as with other Latin doublets, the difference in meaning is no longer easy to determine.

According to Miskell (1959, 22–23), early attestations are rare but show that the normal usage is masculine in the singular and neuter in the plural. However, there is only a single pre-classical attestation of *clīva*, in a fragment of Cato by Nonius (I 286.30). Nonius includes a second attestation from Gaius Memmius “*cuius auctōritās dubia est*” (whose authority is dubious). As for the other forms, “the masculine plural does not appear until Horace and the neuter singular only in Inscriptions” (Miskell 1959, 23). Miskell concludes that the neuter plural is a collective formation (Miskell 1959, 162).

Zimmerman (1924, 228) concurs that *clīva* is a collective and gives its meaning as *Gebirge* (group of mountains), and claims that it can only refer to a contiguous mountain range while masculine plural *clīvī* is a typical count plural. Contrasting with Miskell, he does not find a neuter singular.

Adams (2013, 439) states that *clīva* is “weakly attested” and disagrees with Zimmerman’s definitions, finding no semantic difference between it and *clīvī*. Regardless, this word is of PIE origin (from the root **klei*, with Germanic cognates such as Gothic *hlaiw* and Old English *hlāw*, both meaning ‘funeral ground’*)* (EDL, EDPG s.v. hlaiwa-) making a collective formation at least theoretically possible.

Given the age of the early attestations of *clīva* relative to *clīvī*, it seems safe to conclude that this is a true example of inquorate gender, assuming that the fragments were transmitted correctly. Adams’ objection that *clīva* is weakly attested is valid, but in the same time period *clīvī* is not attested at all. Caution should be taken, however, before attempting to draw a semantic distinction between the two plurals: while this is a noun that is semantically suited to collective formations, it is difficult to derive suitable context from the fragmentary attestations of the neuter.

4.2.4. intubus - ‘endive, succory’

Intubus is the Old Latin spelling, later changing to *intibus* and rarely attested as *intybus*. It also occurs as neuter *intibum* and even feminine *intiba* (LEW). Zumpt (1877, 83) claims “the poets” use *intuba* as a plural. Miskell (1959, 26), who does not mention the feminine, shows that the masculine occurs in fragments of Lucilius, as quoted by Nonius, and then goes on to say that the neuter does not occur until Pliny. This is incorrect, however, as it appears in the previous century in both Virgil and Ovid. Zimmerman (1924, 228–29) cites this neuter plural usage, as well as in the prose author Columella, as collectives. The word was borrowed into Greek as ἔντυβον, where it is neuter throughout the paradigm (EDG).

Intubus “seems to be a loan from Semitic” (EDG s.v. ἔντυβον). Just as in the case of *baltea*, then, a collective reading of *intuba/intiba* requires the collective formation to have still been productive. For this word, however, because the neuter is not attested until the classical period, the collective formation would need to have been productive not just at the time of the borrowing, but all the way up to the classical period, which seems highly unlikely given the relatively small number of non-neuter nouns with neuter plurals.

In both of the appearances of the neuter plural *intiba*’s first attestation in Virgil, the desinence appears in a short position, meaning the masculine plural would not have scanned properly. It is likely, then, that this neuter plural is originally a poetic creation in service of hexameter, and that this usage later found its way into prose.

4.2.5. iocus - ‘joke, jest’

This word has both masculine and neuter plurals. The first attested is the masculine plural, which appears in both Plautus and Cato (quoted by Macrobius), along with a third contested attestation which is also in Plautus. The neuter plural, meanwhile, does not appear until Lucretius in the classical period (Miskell 1959, 26–27).

Ferdinand Sommer (apud Zimmermann 1924, 229) suggested that the neuter plural was created by analogy to the rhyming *loca* (see below). Zimmerman (1924, 229), however, sees *ioca* as another collective. As evidence, he cites a passage from Cicero which he argues has a collective meaning. As Miskell, however, points out, Cicero exclusively used the neuter plural, which “must therefore to some extent lose its collective sense” (Miskell 1959, 164).

The relatively late Latin attestation of the neuter plural would seem to cast doubt on the theory of it being a collective, but there is a supposed Umbrian cognate in the Iguvine Tablets in nominative/accusative neuter plural **iuku** (IIb.23) and **iuka** (III.28), with a meaning Eichner (1985, 146) gives as “*feierliche Gebetsworte*” (‘solemn words of prayer’). While it may seem quite a semantic stretch to get from ‘joke’ to ‘solemn words of prayer,’ *iocus* comes from the PIE **iok-o*, which has reflexes with more general meanings such as Middle Welsh *ieith* (‘language’) and Old High German *jehan* (‘to express, utter’) (EDL). While Newman (1864, 3) doubts the Umbrian connection to *iocus*, Poultney (1959, 199) defends it as a case of specialization on the Latin side and compares it to Lithuanian *juõkas* (‘laugh’). Weiss (2020, 92) agrees that **iuka** is a cognate but gives its definition as just ‘words’.

Given the apparent lack of a neuter singular and the likelihood of the Umbrian **iuku**/**iuka** being a cognate, *ioca* may be the best Latin evidence for an Indo-European collective.

4.2.6. locus - ‘place, spot’

Since Schmidt (1889), this is the standard noun cited as evidence of the collective in Latin. Neuter plural *loca* is often encountered, as is masculine plural *locī*. Clackson, however, argues that “it is impossible to disentangle separate meanings in the Classical language” (Clackson 2007, 102). Others disagree, such as Acquaviva (2008, 39) who points out that while *loca* and

locī both have the meaning of “places,” *locī* had an additional meaning of “written passages or rhetorical patterns” which did not apply to *loca*. Nussbaum (2014, 302) claims that *locī* means ‘various spots’ while *loca* means ‘region.’ Adams (2013, 439) also acknowledges that the plurals have different meanings, with *locī* referring to “passages in literature or common places” while *loca* means geographical places, but then points out that this difference in meaning is not one of collectivity.

Miskell (1959, 27–29), however, states that the neuter plural *loca* is regularly used in the collective sense, and offers as an example a snippet from Cato’s *De Agricultura* 34.2: “*Quae loca sicca et non herbosa erunt*.” The entire sentence is “*Quae loca sicca et non herbosa erunt, aperta ab umbra, ibi triticum serito*,” which the Loeb edition translates as “Plant wheat in soil that is dry, free from weeds, and sunny.” It is just as possible to read this with a non-collective meaning, i.e. “Plant wheat in those places where it is dry, not grassy, and uncovered from the sun.“ Miskell also notes that Marmorale comments that “Early writers, especially Plautus, use ‘*locī*’ and ‘*loca*’ indifferently” (Marmorale apud Miskell 1959, 28). Zimmerman (1924, 230–31), on the other hand, claims that *loca* is the regular plural and that *locī* is only used exceptionally, such as in the previously mentioned sense of written passages, or due to meter. If *loca* was indeed the regular plural, it would help explain why, as Clackson (2007, 102) notes, it can be found in both the collective and distributive sense, even by the same authors or within the same texts. Adams (2013, 439) casts doubt on *loca* as evidence of the collective due to the “quite well attested” neuter singular *locum*. Early attestations for *locum*, however, are rare. One is in CIL I^2 1218 (also available as CLE 67), which Zimmerman (1924, 230) concludes is formed after *loca*. Schön (1971, 65) finds another in a fragment of Ennius, devoid of context, and which he attributes to a desire for balance among forms.

The etymology of this word is unknown. It is attested in an earlier form *stlocus*, but as EDL points out, it cannot come from PIE **stel* (‘to place’) because there is no **-oko-* suffix. It is possible that this, in addition to other *stl-* words attested in Latin, originally came from **sl-* and had already simplified to *l-* by the time of attestation. In this case, the *stl-* spelling would indicate the phonetic realization of a now-unfamiliar consonant cluster (Weiss 2020, 179). EDL suggests a possible preform of **slok-o* with no further insight. We are thus unable to look to etymology to assess the likelihood of the collective origin of *loca*.

It is because of the complementary plurals of this noun that it is often cited as evidence for a collective. But if, as scholars such as Clackson and Marmorale suggest, the plurals were interchangeable rather than complementary in the early language, this argument is weakened. If, on the other hand, Zimmerman is correct that *loca* is the regular plural, it is still not a complementary distribution because *loca* is able to be used distributively. It also appears that attestations of these plurals present a Rorschach test for the reader: if you want to see *loca* in a collective sense, you will. Unfortunately, it does not help answer the question as to why this noun has two plurals.

4.2.7. sībilus - ‘hissing, whistling’

Zumpt (1877, 83) claims “the poets use *sībila* for *sībilī*” and L&S says that poetic use of *sībila* is “merely for the sake of the metre.” Schmidt (1889, 6), however, includes *sībila* in his list of collectives. Miskell (1959, 110–11) does not mention the neuter plural, and instead only mentions a claim by Priscian that this noun is a heteroclite with a fourth declension form, a claim that Miskell doubts.

The etymology of this noun is uncertain. EDL believes that it is likely onomatopoeic and that the related verb *sībilō* is older. LEW attempts to connect it to σίζω (‘I hiss’), but since this is also likely onomatopoeic (EDG) they could be independent creations.

Another potentially related noun is the third declension *sūbulō* (‘flutist’), which L&S defines as “the Tuscan name for *tībīcen*,” which is also a flutist. EDL suggests a connection, with *sūbulō* pointing to **soi-* and *sībilō* reflecting **sī*, but does not explain the lengthened **ī* in the latter. Watmough (1992, 133) argues that *sūbulō* is surely an Etruscan loanword, but rejects a connection to *sībilus* as “phonologically impossible and semantically most unlikely.” L&S, however, connect the plural of *sībilus* to wind instruments and give an example in Lucretius (5.1382): “*et zephyrī, cava per calamōrum, sībilā prīmum agrestis docuēre cavās īnflāre cicūtās*” (“And the zephyrs whistling through hollow reeds first taught the countrymen to blow into hollow hemlock-stalks.”)

Without more clarity on the etymology of this word, it is difficult to comment on the likelihood of it being a collective form. While it appears that the neuter plural usage has different semantics than the singular, they do not appear related to collectivity. L&S gives singular examples in the area “of men,” “of cattle,” and “of things” while the plural (with all examples being in the neuter) are “of wind instruments,” “of snakes, etc,” and “of a flying missile.”

The claim that the neuter plural is entirely due to meter, however, is entirely possible. *Sībila* appears several times in Ovid and Virgil, with the desinence always in a short position.

4.2.8. sparus - ‘small missile weapon with a curved blade, hunting spear’

This word has both a masculine and a neuter plural (L&S). Schmidt (1889, 6) includes *spara* in his list of collectives. Miskell (1959, 41) quotes Nonius’ claim that *sparus* has both masculine and neuter forms, but as he points out, in only one of the examples given is it possible to discern the gender, and that that passage is “the only one in which the neuter gender is attested.” Miskell asserts that the masculine gender must be original, but this is based on an etymological connection to Greek σπάρος (‘a sort of bream’) (Miskell 1959, 168–69), which EDG says is “not very convincing.” EDL points to a possible loanword, but leaves open the possibility of it being of PIE origin, although this noun would be the only attestation of the root. It is worth noting that, if the Greek connection is rejected, cognates are only found in Germanic and Albanian. EDPG (s.v. speru-) thus points to a European origin. This again makes a collective reading unlikely.

Early attestations of the neuter plural in poetry are rare and fragmental, making it difficult to determine the meter. EDL mentions that a neuter *sparum* also exists, but there appear to be only two attestations of it. Miskell (1959, 169), meanwhile, points out three neuter synonyms, *tēlum*, *iaculum*, and *vēnābulum*, and postulates that this could be the source of the neuter. One could also add *missile* to the list. In absence of a better theory, I would agree.

4.2.9. Tartarus - ‘hell’

Zumpt (1877, 83) says that “the poets” use *tartara* as a plural, and L&S agrees, saying the neuter plural is used “on prosodial grounds.” Interestingly, though, this word is borrowed from Greek Τάρταρος, which is also masculine in the singular and neuter in the plural. According to Preller (1860, 51), it is an onomatopoeic adjective, similar to βάρβαρος, of the forms ὁ Τάρταρος, ἡ Τάρταρος, and τὰ Τάρταρα, but he leaves the plural form of the neuter unexplained.

The Greek gender change is first attested in Hesiod. He first uses the neuter plural before switching to the masculine singular, but the meaning of the lines, as well as the switch of gender and even the case of the noun, have been long debated (Clay 2003, 15–16; Beall 2009). In Loeb’s edition, Glenn Most translates it as a singular object possessed by the immortals, but others including Beall consider it a “true plural.” When the masculine singular shows up later in the poem, it is personified. “As a neuter plural, Tartarus is a place into which things get put, not a divine person capable of action and reproduction” (Most 2013, 165).

In Latin, Garcia de Diego López (1947, 46) points out that the masculine is rarely used in classical writing. Lucretius uses both forms. As in Hesiod, the Loeb translation renders *Tartara* as a singular place, while *Tartarus* is a personified being.

Whatever the reason for the irregular paradigm in Greek, it seems likely that *Tartarus* and its neuter plural were simply copied into Latin due to the influence of the poets.

4.2.10. voltus - ‘an expression of countenance’

Voltus (later *vultus*) is an oddity in the group of nouns that are masculine singular and neuter plural: it is, in the singular, a fourth declension noun. With a neuter plural *vulta* in addition to its regular plural *voltūs*, this makes *voltus* a heteroclite.

EDL reconstructs *voltus* as **u̯el-to-*, but either an o-grade or zero-grade of the root will produce this form as well. Schmidt (1889, 6) includes *volta* in his list of collective forms. According to Nussbaum 2014, the first step of deriving a collective is to derive a possessive. If this is to be done through internal derivation rather than, for example, affixation, an o-stem noun like the others in our list would have undergone a change of accent that would have been lost over time as the rules of accentuation for the language changed. For athematic nouns, however, this change of accent may have been accompanied in PIE by ablaut (Clackson 2007, 75). For this reason, according to this theory of collective formation, one might not expect a collective formed to *voltus* to be mistaken for a neuter plural form. However, some of the effects of ablaut would have eroded over time. Take, for instance, Nussbaum’s example of water, in which **u̯ód-r̥/-n-*

(‘water’) becomes **u̯éd-ōr/-n-* (‘body of water’). If *voltus*, for example, comes from **u̯ol-to-* and the root underwent ablaut to **u̯el-*, as with the word for water, the distinction would have been lost when **u̯el-* later also changed to **u̯ol-* through regular Latin sound change (*e* to *o* before an *l* that is followed by anything other than *i* or another *l*) (Weiss 2020, 69, 150). Additionally, some ablaut has simply been leveled away: “Latin nouns have generally obliterated all traces of paradigmatic ablaut in the root” (Clackson and Horrocks 2007, 14). Finally, while ablaut appears to be associated with accent in an early stage of the proto-language, “at a later stage but still in the PIE period this relation no longer existed” (Beekes 2011, 177). While r/n-stems such as the word for water are quite old (Beekes 2011, 206), a u-stem such as *voltus* may not date to a period of the language in which ablaut would accompany an accent shift.

The neuter plural is first attested in Ennius (in a fragment quoted by Nonius, I 314) and then only once more in Lucretius (IV 1213). Skutsch (1985, 652–53) provides two theories for the neuter plural: an old collective, or “an autoschediasm on the part of Ennius, called forth by exigency of the metre.” Indeed, the *volta* in Lucretius is obviously conducive to proper scansion: in “*esse vidēs, iuxtim miscentēs vulta parentum,*” the ending of *vulta* occurs in a short position, where the regular plural *vultūs* would not fit. In the Ennius line, however, *volta* appears in the anceps position: “*āvorsābuntur semper vōs vostraque volta.*” While this makes the length of its second syllable irrelevant, it impacts the preceding adjective *vostra*. Had Ennius used the masculine *voltūs*, the previous word would be *vostrīque*, and the line would not have scanned properly.

Skutsch (1985, 652–53) suggests the Greek neuter πρόσωπον (‘countenance’) as a possible model for *volta*. In Homer, πρόσωπον is employed exclusively in the plural, even when the meaning is singular (LSJ), which may provide a reason for the gender switch. There may be an easier explanation, however: Ennius, who used this noun only once, may have simply mistakenly declined it as a second declension form due to the homophony of the nominative singular between o-stem and u-stem nouns. This homophony already existed in Ennius’ time, having come into being once *o* was raised to *u* before a final consonant, potentially as early as 300 BCE (Weiss 2020, 151–52). It is also possible that Ennius simply employed poetic license and created a new form to enable proper scansion.

4.3. Neuter singular, feminine plural

4.3.1. balneum - ‘bath’

The older form of this word is *balineum*. Despite what L&S says, there is no connection to English *bath*. The Latin word is borrowed from the Greek βαλανεῖον, which itself has an unknown etymology. EDG suggests it is Pre-Greek. The neuter gender of the Greek word shows that the neuter singular is the original gender in Latin.

Rovai (2012, 101) states that *balneum* is feminine “in the plural only.” Varro writes of *balneum* and *balneae* as if they were separate words, with *balneum* having no plural (XXV.48). In XLI.68 he writes of *balneum* being used in the singular and *balneae* in the plural, and that the latter

refers to public baths. He explains that homes did not have multiple bathrooms, so people were unaccustomed to speaking of *balnea* in the plural, though this does not explain why public baths would take on a different gender.

Regardless, things are messier in reality. As L&S points out, private baths are sometimes referred to in the feminine plural, such as in Plautus *The Ghost* 756, where the accusative plural *balneās* is feminine even though it clearly refers to a private bathroom. Additionally, Reinesius' *Syntagma Inscriptionum Antiquarum* includes an inscription (XI.CXV) which uses *balnea* in the singular to refer to a private bath, and conversely "even in the time of the republic" a public bath could be referred to as *balneum* (DGRA s.v. balneae).

According to Miskell (1959, 143–44, 187), "the Roman habit is to use the word in the neuter plural" and that this led to *balnea*, along with other neuter words that were more frequently used in the plural, to be reanalyzed as feminine singular, which had a homophonous ending in the nominative. It is worth noting, however, that this homophony *only* exists between the neuter nominative plural and the feminine nominative singular. In order for this reanalysis to take place, it would have required not only for the neuter plural *balnea* to be used more commonly than the singular *balneum*, but for it to have been the subject of the sentence. We must also reconcile Miskell's assertion that the neuter plural was common with Varro's insistence that *balneum* had no plural. According to a footnote in Loeb's translation of Varro (491, footnote a) the neuter plural "began to be used in the time of Augustus." A form that does not appear until after the time of Varro is clearly too late to cause a reanalysis leading to a heteroclitic plural that is itself mentioned in Varro.

Another possible cause of the feminine plural is through analogy, and several models have been proposed. Weiss (2020, 212) suggests *aquae* ('waters') while Garcia de Diego López (1947, 75–76) points out that the form is similar to that of *thermae* ('hot baths'). Rovai (2012, 101) cites three separate sources that offer *epulae* as a model due to the "frequent co-occurrence" with *balneae*, but as *epulae* itself is an irregular feminine plural of neuter *epulum* (see below), we must first explain *epulae* before we can suggest it as the model for *balneae*.

Finally, DGRA (s.v. balneae) claims that "the poets" use the neuter plural *balnea* due to the metrical constraints of hexameter. While they do not provide examples, this makes sense. Horace, for instance, uses the neuter plural three separate times in *Epistles* (I.I.92, I.XI.13, and I.XIV.15) and in each of those lines the feminine plural would not have scanned properly. This is an amusing counter-example to Gummere's (1934, 5) assertion that the "metrical convenience" of the neuter plural "led to an illogical use of such plural forms." In the case of *balneum*, it has taken an irregular paradigm and made it regular.

4.3.2. dēlicium - 'delight'

While dictionaries give polite definitions such as "delight," many of the classical attestations appear more in line with Adams' (1982, 223) definition of "fashionable [way] of referring to sexual activity." Whether this noun is truly an example of inquorate gender is unclear; it normally

appears in the feminine plural, and while it has no neuter plural, the neuter singular is “sporadic” (Rovai 2012, 104).

Indeed, this noun appears quite flexible in gender. According to Corbeil (2015, 15), “the nouns [*dēlicium*] and [*dēliciae*] (‘sweetie’) function in Latin as terms of endearment for a single male or female beloved, normally young, despite the fact that the nouns are respectively neuter singular and feminine plural” although later (Corbeill 2015, 97) he admits that *dēliciae* “can describe either a male or a female,” and that in Terence “the masculine and feminine singular forms [*dēlicius*] and [*dēlicia*] occasionally surface in order to correspond more closely with the physical reality of the boy or girl so designated” (Corbeill 2015, 15).

This noun is one of the ones used by Rovai (2012) to argue that the neuter o-stem nouns were relatively recent in Proto-Indo-European, and that in cases where a noun is attested with both feminine first-declension and neuter second-declension forms, the second-declension noun is formed by reanalysis of the first-declension one. While this reanalysis is made possible through the homophony of the a-stem feminine singular and the o-stem neuter plural, the actual trigger for reanalysis is more speculative. Rovai’s preferred explanation is that ambiguous constructions such as sentences using “opinion predicates” like *dīcitur* (“it is said”) and *vidētur* (“it seems”) could be read as either personal passive or impersonal constructions. An example he gives from Varro is “*spīca mutila dīcitur*,” where a personal passive reading (“Ear is said to be ‘hornless’”) causes *spīca* to be analyzed as a first declension feminine singular due to it being in the nominative case, while an impersonal reading (“It is said that ears are hornless”) yields a second declension neuter plural interpretation due to it being in the accusative case (Rovai 2012, 107–8).[8]

However, while his argument looks sound for many of the words on his list, this one has two issues. First, the noun is almost exclusively used in the feminine plural (the L&S dictionary entry is under *dēliciae, -arum*, for example). Secondly, as Rovai himself points out, it has no neuter plural form. With one of the two homophonous forms being rare and the other being nonexistent, the ambiguity he posits would not be possible. For the same reason, we can rule out Zimmerman’s explanation (albeit not proposed for this word) that feminine plurals to neuter nouns form a count plural; since there was no neuter (collective) plural, there was no need to distinguish a countable plural.

It is possible that these lesser-attested, or non-attested, forms did exist in colloquial speech. Because *deliciae* was a euphemism for “illicit sex” (Adams 1982, 171), it and its various forms may have been less likely to appear in the written record. For instance, Cicero uses it with “a note of disapproval” in *Pro Caelio* (Adams 1982, 197). It may be, then, that the homophonous forms did exist and were able to trigger reanalysis, but do not survive to us due to their perceived vulgarity.

[8] Rovai (2012, 108) says that in the impersonal construction, *spica* “will be intended as [a] second-declension neuter nominative [plural],” but this must be a mistake, as the subject of the infinitive with *dicitur* used impersonally is in the accusative case (Gleason 2016, 267) and because the argument does not make sense otherwise.

4.3.3. epulum - ‘feast, banquet’

The feminine plural *epulae* is the oldest attested form, appearing in Plautus. The neuter singular *epulum* is also attested quite early, with Lucilius, as quoted by Nonius, using both forms on the same line: “*Īdem epulō cibus atque epulae Iovis omnipotentis*” (“The same food and the same festive dishes in a feast of Jupiter the all-powerful.”) Despite this, Law (1987, 137) points out that the noun’s usage in the singular was initially less common: while the grammarian Phocas documented the gender switch and then stated that many writers use the noun only in the plural, Boniface’s subsequent work which “follows Phocas… very closely” omits this caveat, which Law attributes to the increasing usage of the singular by Christian writers.

A neuter plural *epula* is not attested until post-classical times, and a feminine singular *epula* does not appear until the Christian era (Schön 1971, 75–76). Because of this, unlike other words that switch between the neuter and feminine, Rovai (2012, 101) does not attempt to explain the gender switching of *epulum* as a reanalysis of forms, noting that the noun “has a consistently split paradigm” of being neuter in the singular and feminine in the plural. In other words, there was apparently no feminine singular to reanalyze as a neuter plural.

This gender change is unexplained, according to Leumann (1977, 279), who speculates that it could be from an original difference of meaning, such as with Medieval Latin *malluvium* (‘wash basin’) and *malluviae* (‘water for hand-washing’), but does not speculate what the meanings may have been. Bell (1923, 74) notes that Greek and Latin used plural forms for single days, such as *Calendae*, the first day of the month. This led to holidays and feasts being referred to in the plural, such as *nuptiae* (‘wedding’) and *feriae* (‘holy day’). He states that *epulae* is by analogy with these special days.

Like *epulae*, *nuptiae* and *feriae* are attested early, also appearing in Plautus. This makes Bell’s theory chronologically possible, if one assumes that the neuter gender of the singular is original. The etymology is not much help in resolving the original gender. EDL hesitantly suggests PIE **h$_1$ep-lo-*, which would give it a Germanic cognate of Old High German *uoba* (‘celebration’), which is feminine. But since *uoba* does not have the same form, lacking the **-lo-* suffix, it is of no use in determining the original gender. If the feminine were original, however, there would be no clear explanation for the appearance of the neuter. For this reason, and due to the early attestations of both the neuter singular and feminine plural, it seems best to assume that *epulum* is original and that *epulae* is formed, as Bell suggests, by analogy. From there it is plausible that the suggestion that the plural *balneae* was itself formed in analogy to *epulae*, given their frequent co-occurrence, is correct.

4.4. Feminine singular, neuter plural

4.4.1. carbasus - ‘flax, fine linen’

Carbasus is a feminine o-stem, which is uncommon, but as Zumpt (1877, 45) points out, is common for plants. He gives different meanings for the singular and the plural, with the former being flax and the latter being sails made from it (1877, 83), but L&S defines *carbasus* both as flax and the things made from it without regard to number. While most attestations for things made of flax are in the plural, there are singular attestations in Lucretius and Virgil.

There are also isolated attestations of the noun in both the masculine singular (L&S) and the masculine plural (Adams 2013, 442), though this can likely be chalked up to confusion given the declension. Later, a neuter singular appears (Adams 2013, 442).

Rovai’s theory of reanalysis (2012) will not explain the gender switch for this noun since it’s an o-stem feminine in the singular, lacking any homophony with the neuter plural. Additionally, Adams (2013, 442) rejects a collective explanation, despite the attractiveness of “sails [forming] a set,” because the noun is “mainly poetic” and the plural could be due to meter. He then mentions *vēla*, the plural to *vēlum* (‘cloth’), but with a more specific meaning of ‘sail’ in the plural, as a possible analogical model. Garcia de Diego López (1947, 78) also suggests analogy with *vēla* or with *umbrācula* (‘parasol’).

What these attributions to analogy ignore, however, is that this noun is borrowed from the Greek κάρπασος, which is also feminine in the singular and neuter in the plural. The Greek word does not appear until the end of the first century BCE (Gardani 2013, 127), long after a collective formation should have ceased to be productive. The Homeric word for sail is ἱστία, which is a neuter plural but was used by Homer with a singular meaning (Mark 2005, 131). It is possible that when the Greeks wanted to denote a sail made of κάρπασος, they used the neuter plural κάρπασα in analogy with ἱστία.

4.4.2. margarita - ‘pearl’

Charisius (108.6-17) writes that the word is feminine and that to use the neuter *margaritum* is wrong, admonishing even Varro himself for writing “*margaritum ūnum, margarita plūra,*” and indeed as Rovai (2012, 120) shows there are significantly more attestations of the feminine than of the neuter.

Margarita is one of the nouns Rovai uses to argue that the feminine a-stems predate neuter o-stems. Unlike most of the words in that list, the feminine of this noun is not clearly older than the neuter; they are merely contemporary (Rovai 2012, 104). He does claim that the neuter plural is older than the neuter singular, with *margarita* being attested in Varro while *margaritum* is not attested until Augustus, and that this is evidence for his theory that the neuter o-stem form of these doublets came about through reanalysis of the feminine singular. This, however,

ignores the above quote of Varro by Charisius, in which he uses both the singular and the plural of the neuter.

Loporcaro (2018, 19) also notes that the neuter and feminine are attested in the same period, with both occurring in Varro, but asserts that the feminine must be older because the word is borrowed from a feminine Greek word μαργαρίς. Rovai (2012, 102) provides the same etymology and elaborates that the accusative singular form μαργαρίδα must have been reanalyzed as an a-stem nominative singular. The noun μαργαρίς appears to be an infrequent word which LSJ defines as “palm-tree,” but has a secondary definition pointing to μαργαρίτης, a word meaning “pearl.” Indeed, EDG gives μαργαρίτης as the etymology for Latin *margarita*. This is a more attractive etymology phonologically and does not require the reanalysis of the accusative, but adds an additional wrinkle: μαργαρίτης is masculine.

Charisius (108.6-9), who agrees with EDG’s etymology, provides a solution: he points out that Greek nouns in -ης are borrowed into Latin either as feminine, as with *charta* (‘paper’) from χάρτης, or common gender, as with *athleta* (‘athlete’) from ἀθλητής. Additionally, as Rovai (2012, 102, 120) shows, in the neuter, the plural of *margarita* is more frequently used than the singular. Putting these things together, the masculine μαργαρίτης could have been borrowed into Latin as a feminine and been reanalyzed into a neuter plural, making Rovai’s proposal still possible even with the different etymology.

4.4.3. ostrea - ‘oyster’

Zumpt (1823, 47) lists this among words that are feminine in the singular and neuter in the plural, noting that it also has a regular feminine plural.[9] As with *margarita*, both the feminine and the neuter forms are ancient, appearing in Old Latin, although the neuter singular does not occur until “the age of Nero” (Rovai 2012, 103–4).

Wackernagel (1924, 17) claims that there is a distinction in meaning between the genders, with the feminine being the animal and the neuter being the shell. However, it does not appear that this was always the case. Matasović (2004, 49) lists *ostreum* as one of only two Italic neuter words for animals, with the other being *animal* itself. He then says that a distinction came about in late Latin, likely due to the influence of teachers.[10] Indeed, the fifth-century grammarian Cledonius wrote that the animate *ostrea* must be differentiated from the inanimate *ostreum* (Kilarski 2013, 81).

As with *margarita*, Rovai argues that the contemporary attestations of the feminine and neuter is not a counterexample to his claim that the neuter arose from reanalysis of the feminine. Miskell (1959, 187) agrees that reanalysis is at work, but implies that it went in the other direction: the neuter word was commonly used in the plural, causing confusion with the feminine singular. In fact, this does seem more likely to be the case. The noun was borrowed from the neuter Greek

[9] Zumpt 1877 (page 83) lists this as *astrea* which is presumably a misprint.
[10] Matasović says this is a distinction between neuter “shell-bone” and feminine “shell,” but the latter is presumably a mistake and must mean to say “animal.”

ὄστρε(ι)ον (EDG s.v. ὄστρεοιν), and since “oysters are usually referred to in the plural,” it is likely that ὄστρεα is the word that would have been borrowed into Latin (Adams 2013, 408). It seems possible, then, that a reanalysis would have been motivated not only by homophony, but by the abnormality of referring to an animal in a neuter gender, and perhaps aided by the scolding of grammarians.

5. Conclusion

I have examined four inquorate genders in Latin. While there is not, and was never expected to be, a single cause of inquorate gender, there also turns out to be no single cause for any one of the inquorate genders. For some of the nouns examined it’s not clear that they even belong to an inquorate gender, whether because an unattested form as been assumed by grammarians, as with **clātrum*, or because the noun is attested with two genders in both the singular and plural, as with *caelum*.

While Schmidt’s observation that the neuter dual ending and the masculine plural ending have fallen together in Latin is valid, I cannot support his theory that this explains the irregular masculine plurals *rāstrī* and *frēnī*. On the other hand, Weiss’ extension of this explanation to *caelī* is compelling, but not the only possible conclusion.

Scholars such as Schmidt and Zimmerman have been too willing to attribute neuter plurals of non-neuter singulars as collective formations. In many of these cases, factors such as late attestation of the neuter or non-Indo-European etymology would have required collective formations to have been productive long after the ending had been re-analyzed from a derivational suffix to an inflectional one. Furthermore, some of these neuter plurals, such as *volta*, are much more easily explained as poetic license given the constraints of Latin meter. This does leave unexplained the later appearance of collective-seeming neuter plurals such as *digita*.

Rovai’s attempts to argue that feminine singulars were reanalyzed as neuter plurals are sometimes stymied by etymology, as with *ostrea*, or lack of attestation of one of the forms, as with *dēlicium*. In cases like the former, a theory of reanalysis is still possible, but in the opposite direction that Rovai proposed. In the latter cases, however, the theory is untenable.

Finally, for some forms we must fall back on analogy. While this sometimes feels like a cop-out, for words like *epulae* there is no other suitable explanation.

It is clear that inquorate gender arises due to language change, whether phonological, analogical, or intentionally by poets. The creation of an inquorate gender and placement of nouns into it sometimes happened prehistorically, as with frēnum, but continues to occur as the language evolves. It is possible, then, that inquorate genders existed in the proto-language, appearing and disappearing over centuries and millennia with the ever-changing tongue. Could this be a cause of nouns that belong to different genders in the various branches, such as the masculine Latin *cruor* (‘blood’) alongside its neuter Greek cognate κρέϝας?

Further research in this area can go both deeper into Latin and broader into other branches of PIE. By expanding the corpus to later attested forms such as *digita* and *mūra*, perhaps insights could be made about the productivity of the collective: did it remain productive in lower registers, or did it rather re-emerge after a period of hibernation? Or are these forms the product of something else entirely? Likewise by broadening the study to other branches of PIE, we may be able to narrow down the potential causes of some phenomena. If, for instance, a language without a surviving poetic tradition attests neuter plurals to non-neuter singulars, those plurals are unlikely to be due to meter and may point more definitively to a collective.

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