Gender/number syncretism in Yelmek verbal suppletion

James Gray and Tina Gregor
Australian National University/ARC Centre of Excellence for the Dynamics of Language

1. Introduction[*]

In this paper we explore patterns in syncretism between suppletive verbal stems in the Papuan language Yelmek, in particular in light of a prediction made in Kramer (2018) concerning gender/number syncretisms. A number of Yelmek verbs supplete based on the number and gender features of the verbs object, and a number of intransitive verbs based on the number of the subject. The generalisation that we focus on in Yelmek is that if a verb with a feminine singular object is suppletive with respect to the masculine singular, then so must the plural form be suppletive (with regard to the masculine); in other words, verbs with masculine and plural objects never share the same stem to the exclusion of the feminine form. Since masculine is the default gender in Yelmek, at first glance these patterns seem to contradict the prediction in Kramer (2018) about the relation between gender/number syncretism and the default gender; however we argue that other data suggest that verbal stems associated with feminine objects are the default stems. Therefore, Yelmek does not constitute a real exception to Kramer's prediction once the notion of default gender in Yelmek is clarified.

We also argue that despite similarities to the types of generalisations discussed in the *ABA literature (e.g. Bobaljik 2012, Smith et al 2018, Moskal 2018, among many others), a morphological approach to the Yelmek data is preferable over a morpho-syntactic account. Although the data shown here do descriptively constitute a *ABA pattern, we argue that there is a lack of evidence for a containment relation between gender and number in Yelmek, and thus the patterns described here do not belong to the same phenomenon. Cross-linguistic data on gender/number syncretisms also show a lack of *ABA patterns in this domain generally.

The suppletion patterns described here for Yelmek introduce novel data on number/gender syncretisms from a new domain, namely verbal suppletion, into the discussion of syncretism and the relation between number and gender, and furthermore provides new evidence for a split in the notion of default in the domain of morphological gender (Adamson & Šereikaitė, to appear).

2. Convergent to gender

It has long been noted that there is a close morphological relation between gender and number, which seem more closely intertwined with each other than either of them appear to be to person (e.g. Greenberg 1963, Harley and Ritter 2002, Baker 2011, Kramer 2015, a.o.). A particularly salient aspect of this relationship is the fact that gender is typically less marked in plural contexts than singular contexts, as noted for example by Greenberg's Universal[1] 37: "A language never has more gender categories in nonsingular numbers than in the singular" (Greenberg 1963). In other words, gender is often neutralised in plural contexts.

There are two main ways that this neutralisation plays out morphologically; most often it results in what Kramer (2018) calls a *convergent to plural* pattern, whereby gender is neutralised in plural, and the plural has distinct morphology which distinguishes it from either gender. For example in a two-gender system like French, the language distinguishes three distinct determiners: *le* for masculine singular, *la* for feminine singular, and *les* for the plural of either gender. This is a very common neutralisation strategy.

In this paper we will mainly focus on the other way this neutralisation plays out morphologically. In contrast to the convergent to plural patterns, Kramer (2018) examines a hitherto relatively understudied phenomenon which she calls *convergent to gender*. These are cases where the morphological form of plural agreement is syncretic with that of the agreement morphology for the singular form of a particular gender– for example, masculine singular and feminine singular have distinct agreement morphology; plural does not distinguish gender, but plural agreement morphology is syncretic with masculine singular agreement morphology. Exactly this pattern is demonstrated in Maay definite determiners (Kramer 2018; originally Paster 2006), where the plural form is syncretic with the masculine singular form:

(1) a. Feminine: *-ti*
     b. Masculine: *-ki*
     c. Plural (either gender): *-ki*

Kramer argues that these patterns are morphological rather than synctactic in nature, and can be explained within the framework of Distributed Morphology (DM) as the result of the feature-deleting operation Impoverishment coupled with underspecification of Vocabulary Items. The reasoning goes as follows: since gender is systematically neutralised in plural contexts in these languages, we can assume that an Impoverishment operation consistently deletes all gender features in the presence of plural. An obligatory rule such as in (2) ensures plural and gender features cannot coincide by the time the feature bundle reaches Vocabulary Insertion:

(2) [+PL]   →   [+PL]
     [+/–FEM]

Since plural and (either of the) singular genders do not share a set of features that distinguish them from the other gender (and hence do not form a natural class) we can assume that the Vocabulary Item that is inserted for plural and one of the genders is radically underspecified, and can thus be

---

[1] Perhaps a strong tendency, if not actually universal (Plank & Schellinger 1997).

inserted in either context as a type of elsewhere/default form. The other Vocabulary Item specifies the non-default gender in its environment; in the case of the Maay determiners in (1), *-ti* will be specified for [+FEM], whereas *-ki* will be completely unspecified wrt both gender and number.

Kramer assumes that default gender represents the absence of gender features; when a noun without gender features is introduced, it is simply left without a gender feature, which means the Vocabulary Item inserted for default gender will be the same as those which are unspecified for gender. This brings Kramer to the following prediction:

(3)   In a language where gender and number are simultaneously syncretic, the VI [Vocabulary Item] used for plural agreement will be the same VI used for default gender agreement.

Kramer demonstrates how this accounts for convergent to gender syncretism patterns in a range of languages. Crucially, this analysis relies on the representation of default gender as being the lack of gender features– a default noun simply has not been assigned gender features. It will thus pattern morphologically with the same Vocabulary Items as an Impoverished feature bundle (such as plural nouns in a language with an Impoverishment rule like (2)), and these will be syncretic.

In this paper we present data from Yelmek which at first glance seem to contradict this prediction; however taking some further Yelmek data into account shows that these examples do indeed fall under Kramer's prediction, when the split nature of defaults in Yelmek is taken into account.

3. Yelmek

Yelmek is a language spoken in southern Papua on the island of New Guinea, and together with the neighbouring language Maklew makes up the small Yelmek-Maklew family (less than 1000 speakers in the family), which demonstrates no identifiable genetic affiliation to any other language family; see Gregor (2019; in prep.) for a detailed description of Yelmek grammar[2].

Yelmek distinguishes two genders, masculine and feminine. Gender is assigned according to biological sex if salient and/or relevant for human and animate nouns, but clear semantic grounds for gender assignment becomes relatively opaque beyond that. Inanimates can be of either gender. Yelmek therefore has both natural (i.e. semantic) and arbitrary (i.e. non-semantic) gender. If the gender is unknown (or unimportant), then masculine is the default gender. Gender is not marked on nouns themselves, and is instead only marked on verbs; both as agreement morphology, as well as being a conditioning environment for suppletion. Gender is also only distinguished in third person, and is neutralised in the plural.

Yelmek distinguishes only singular and plural numbers. Number is similarly not marked morphologically on nouns themselves, but is distinguished in the agreement morphology on verbs, modifiers, demonstratives, and in pronouns.

---

[2] A note on the data presented in this paper: this data was collected by one of the authors as part of a larger project writing a description of Yelmek grammar (namely Gregor in prep.). Verbal suppletion was not the main focus of that project, so some examples that would have been relevant for this paper were not tested at the time. What we present here is the data available to us from those field trips to New Guinea; further testing would doubtless be needed to be conclusive on some of these questions. This paper therefore represents a preliminary analysis of the data available to us as the time of writing.

3.1 Verbal suppletion

A relatively large number of Yelmek transitive verbs supplete based on the number and gender features of their objects; a number of intransitive verbs also supplete conditioned by the number of the intransitive subjects. This pattern of verbal suppletion is well documented in a range of languages (see e.g. Veselinova 2006 for an overview[3]) and has been the subject of discussion in relation to its relevance in investigating locality constraints on conditional allomorphy (Harley et al 2016; Bobaljik and Harley 2017; Weisser 2019). However as far as we are aware, Yelmek is the only case in the literature in which gender features are also relevant for determining verbal suppletion, in addition to number.

An example of this type of suppletion can be seen in the following sentences (see Gregor in prep. for finer details on Yelmek morphosyntax)[4]; note that neither gender nor number are marked on the noun itself, that subject agreement does not change between examples, but that the verbal stem alternates according to the features of the object:

> (4) a.   numəl   pogua
> num-l   p-ogu-\a
> dog-ACC RPST.SG-kill.**FEM.OBJ**-RPST
> 'He killed a (female) dog.'
>
>   b.   numəl   pegula
> num-l   p-egul-\a
> dog-ACC RPST.SG-kill.**MASC.OBJ**-RPST
> 'He killed a (male) dog.'
>
>   c.   numəl   peka
> num-l   p-eke-\a
> dog-ACC RPST.SG-kill.**PL.OBJ**-RPST
> 'He killed dogs.'

That verbal suppletion corresponds to the features of the object, while agreement indexes the features of the subject are shown in the following three examples; (5)a. and (5)b. both have a masculine object, reflected in the choice of verbal stem, whereas (5)c. has a feminine object with concomitant alternation in verbal stem. The marked feminine subject agreement marker *pa* is shown in (5)b. and (5)c.

> (5) a. eu omgo   wut-nek   ebi   baiy-a
> 3SG person small-ATTR DEF.SG.ACC see.MASC.OBJ-RPST
> 'He saw the small man.'

---

[3] This type of verbal suppletion is also a not uncommon feature in languages of New Guinea, see other examples in e.g. Arka (2012); Foley (1986:§5.3); a.o.

[4] Glossing conventions: ACC – Accusative; ATTR – Attributive; DEF – Definite; DPST – Distant past; FEM – Feminine; FUT – Future; IPV – Imperfective; IRR – Irrealis; MASC – Masculine; OBJ – Object; PL – Plural; PRF – Perfect; RPST – Recent Past; SG – Singular.

    b. eu omgo   wut-nek   ebi   pa   baiy-a
       3SG person small-ATTR DEF.SG.ACC RPST.FEM   see.MASC.OBJ-RPST
       'She saw the small man.'

    c. eu omgo   wut-nek   ebi   pa   aŋay-a
       3SG person small-ATTR DEF.SG.ACC RPST.FEM   see.FEM.OBJ-RPST
       'She saw the small woman.'

The three examples in above in (4) demonstrate the full range of environments that can condition verbal suppletion in Yelmek. A verb can supplete in the context of a masculine singular object, a feminine singular object, or a plural object (with no gender distinction).

However, although a verb can have up to three forms depending on its objects features, most verbs do not have three forms specified for each of these environments; the majority of suppleting verbs only have two forms. Taking this verbal suppletion to be root allomorphy (e.g. Harley 2014), we refer to a single verbal stem form inserted in more than one of the contexts shown above in (4) as *syncretism*. The natural question is then what the possible syncretism patterns are given the conditioning environments, and which are actually (un)attested in Yelmek. With maximally three conditioning environments possible, there are five possible syncretism patterns between verbs with objects associated with masculine (singular), feminine (singular), and plural features (no gender distinction):

(6) a. masculine = feminine = plural
    b. masculine = feminine ≠ plural
    c. masculine ≠ feminine = plural
    d. masculine = plural ≠ feminine
    e. masculine ≠ feminine ≠ plural

Example (6)a. represents no suppletion (i.e. syncretism between all three environments); (6)b. represents that number is the relevant category for conditioning suppletion, with a singular/plural split; (6)c. represents feminine and plural being syncretic to the exclusion of the masculine; (6)d. represents masculine and plural being syncretic to the exclusion of the feminine; and (6)e. represents a three-way split, with no syncretism (i.e. as in example (4) above). Extending Kramer's (2018) prediction to this scenario, if plural morphology is syncretic with one of the genders, then it should be the default gender– in the case of Yelmek, masculine– on the assumption that this syncretism comes about via underspecification, and a default noun is unspecified for gender. The Impoverishment of gender features in the context of plural features, and absence of gender features for the default gender should pattern them together morphologically, as both are unspecified.

However, what we find in Yelmek is that all patterns in (6) are attested *except* (6)d. The verbal stem for a verb with a plural object is very often syncretic with the same verb with a feminine singular object; similar syncretism between plural and masculine singular objects is unattested in Yelmek:

(7) *Examples of all types of Yelmek verbal suppletion patterns*

	VERB STEM WITH MASC. OBJECT	VERB STEM WITH FEM. OBJECT	VERB STEM WITH PL. OBJECT	
a. *masc=fem=pl*	iblo	iblo	iblo	*'chase'*
b. *masc=fem≠pl*	elie	elie	epge	*'give'*
c. *masc≠fem=pl*	eŋepe	oijopo	oijopo	*'hold'*
d. *masc=pl≠fem*	–	–	–	–
e. *masc≠fem≠pl*	oikio	emleŋe	kako	*'throw'*

The generalisation that arises is the following:

(8)   If the feminine singular is suppletive wrt to masculine singular in Yelmek, so must the plural form be suppletive wrt to the masculine singular.

This generalisation is quite systematic in Yelmek. In (9) we detail of the 120 verbs in our sample how many show which syncretism patterns; 50 show gender/number triggered suppletive behaviour to some extent.

(9) a. masculine = feminine = plural $n = 70$
    b. masculine = feminine ≠ plural $n = 7$ (2 transitive; 5 intransitive)
    c. masculine ≠ feminine = plural $n = 39$
    d. masculine = plural ≠ feminine $n = 0$
    e. masculine ≠ feminine ≠ plural $n = 4$

Note that all intransitive verbs supplete according to the number only of their single argument[5] (gender is never relevant), and are thus of the type *masculine = feminine ≠ plural*. What is noticeable among the other verbs is the dominance of the *masculine ≠ feminine = plural* pattern, which is by far the most common suppletive verb type– 39/50 suppletive verbs show this pattern; although only 6 of these are strongly suppletive.

Some of the verbs are strongly suppletive in that the stems are wholly replaced by phonologically distinct forms, as shown for example in the table in (7); many of the verbs however show weak suppletion, limited to ablaut-like alternations in vowels, and retain the same consonantal forms (or differing only slightly, e.g. by voicing). There are a number of relatively regular feature-vowel

---

[5] It would be an interesting question whether the intransitive verbs which allow suppletion are all unaccusative, as suggested for Hiaki (Uto-Aztecan) by Harley et al (2016). Although it is true that they are all relatively non-agentive (namely, 'enter', 'sleep', 'fall', 'go', and 'come'), further testing would be needed to determine their unaccusative or unergative status. Discussion in the literature cited suggest that standard tests for unaccusativity may also not be completely standard cross-linguistically. We don't investigate this issue further here.

correspondences, particularly *e-√-e* with masculine and *o-√-o* with feminine/plural. Some examples of these are given in (10).

(10) *Cases of weak suppletion*

VERB STEM WITH MASC. OBJECT	VERB STEM WITH FEM. OBJECT	VERB STEM WITH PL. OBJECT	
elape	olapo	olapo	*'extract'*
eŋume	oɲumo	oɲumo	*'tie'*
ikŋo	okŋo	okŋo	*'insert'*
məŋe	omŋe	omŋe	*'fold'*

We have included these as cases of weak suppletion as the correspondences between vowels and gender/number features are only strong tendencies; there are exceptions. However regardless of whether this count as real suppletion or not (i.e. whether they must be stored as separate lexical items, or speakers actively derive these forms productively), because we will analyse the patterns in Yelmek suppletion as purely morphological in nature (i.e. relating to exponent choice), both stem suppletion and such verbal affixes could receive a unified treatment, as both refer to situations where the input to Vocabulary Insertion has several possible and competing exponents. The difference between the two relates only to what that input is– the verbal root, or verbal gender affixes.

3.3 The nature of defaults in Yelmek

As described, masculine is the default gender in Yelmek with regards to gender assignment; however, there is evidence that the feminine singular verbal stem is the default form, in particular the fact that it is the feminine singular form which is used in first and second person singular objects, regardless of their natural gender.

What these suggest is that there is that the notion of default in the domain of gender in Yelmek is split between default gender assignment and default verbal stem. This is shown by the verb stem used for local persons. Regardless of the gender, all first and second person singular objects trigger the verbal form otherwise associated with feminine singular objects. For example in (11), where a speaker uses the verbal stem associated with feminine singular/plural objects, despite acting out the role of a man[6]:

(11)   ŋələl   mad   ba   ŋəpŋaipa
      ŋəl-l   mad   ba   ŋə-/epŋe-\ai-pa
    1SG-ACC like.this FUT   1OBJ- hit.FEM/PL.OBJ-IMPRV-3PL.IRR
    'They will hit me like this.'

If a verb has a form specified for feminine singular, it is this form that is used with non-third person

---

[6] This sentence was collected as part of the Family Problems Picture Task (see Barth and Evans 2017); although the speaker of this sentence was female, she is acting out the thoughts of a man in the story.

singular objects, regardless of the objects gender. If the verb has a two-way split as in (11), then the verbal form is the one that covers feminine singular and plural. First and second person plural objects are discussed below. We argue that the choice of verbal stem in these contexts strongly suggests that the verbal form associated with feminine singular objects is completely unspecified for gender or number features.

4. Analysis

We represent Yelmek number as the feature [±SG], and gender as [±FEM], although nothing relies on using exactly these features as far as we can tell. Although Yelmek has both natural/semantic gender, as well as arbitrary/non-semantic gender, we treat these two types uniformly here, as the natural/arbitrary distinction does not influence the conditions for suppletion– both semantic and non-semantic forms of genders trigger the same suppletion (see also e.g. Kramer 2015: 247 for more examples whereby the natural/arbitrary gender distinction is unimportant for morphology). This means that the actual representation of the natural/arbitrary gender distinction in Yelmek is not crucial for our analysis here, and a variety of approaches to the distinction could be evoked; the conditioning environment for allomorphy clearly references [±FEM] only.

Working within a DM framework, we assume that Impoverishment operations in Yelmek always delete gender features both in plural contexts (12.a), and in the context of first and second persons (12.b), represented here by the feature PART(icipant). These ensure that gender is never morphologically distinguished in plural or 1/2 person object contexts.

(12) Obligatory number and person triggered Impoverishment in Yelmek:
    a.   [−SG]   → [−SG]
        [+/−FEM]

    b. [+PART] → [+PART]
         [+/−FEM]

We furthermore assume that Yelmek verbal suppletion is a case of contextual allomorphy rather than via an Agree relation (see e.g. Harley et al 2016; Bobaljik and Harley 2017; Weisser 2019). This means that Vocabulary Items competing for insertion make reference to the features of the object in their conditioning environment, rather than those features being present in the feature bundle itself. Although this is not essential, note that we will represent the suppletion-triggering features in the conditioning environment of Vocabulary Items, and just assume that they are within the relevant locality domain, and are therefore visible to Vocabulary Insertion.

We also argue that although masculine is the default gender with regards to gender assignment, its representation is not the absence of gender features. Instead, Yelmek must have a rule such as "when in doubt, assign [−FEM]", rather than leaving the noun genderless. The default status of the masculine in this domain contrasts with the default status of the feminine verbal roots. Due to the verbal forms associated with feminine singular also being used in other contexts (e.g. all other singular person values), we assume that the feminine verbal stem is radically underspecified; both for gender as well as any number or person features. This type of mismatch between default gender wrt gender assignment and featural representation has been recently claimed to be a feature of Lithuanian as well (Adamson & Šereikaitė, to appear).

Under these assumptions, all attested syncretisms are easily captured, and make reference to only two feature values: [–FEM], [–SG]. Firstly, a *masculine = feminine = plural* verb simply does not supplete, so a verb like 'chase' only has one Vocabulary Item that can be inserted:

(13) √CHASE ↔ iblo

A *masculine ≠ feminine = plural* verb such as 'hold' on the other hand (cf. the table in (7)) will have the following possible exponents[7]:

(14) √HOLD ↔ eŋepe / [–FEM]
            ↔ oijopo

The attested *masculine = feminine ≠ plural* verbs indicate that number is the relevant environment:

(15) √GIVE ↔ epge / [–SG]
           ↔ elie

Three-way contrasts (*masculine ≠ feminine ≠ plural*) are also straightforward to capture:

(16) √THROW ↔ oikio / [–FEM]
            ↔ kako / [–SG]
            ↔ emleŋe

With these assumptions, all attested syncretisms are straight-forward to account for. Assuming this representation of gender/number and the Impoverishment rules in (12) also account for the forms of first and second person plural objects as well. Assuming [–FEM], [–SG] to be the relevant features, and that all gender is deleted in the contexts of first/second persons and in plural contexts, then we would expect local person plural objects to retain their [–SG] feature, as number features are not deleted by our Impoverishment rules. If a verb has an exponent that specifies a form for [–SG] objects (e.g. three-way verbs such as (16) above), we would expect this form to be inserted. If the verb does not have an exponent specified for [–SG], then the underspecified exponent (i.e. feminine singular) should be inserted; this would be a *masculine ≠ feminine = plural* verb such as in (14).

This is exactly what happens. A second person feminine plural feature bundle, for example, will undergo gender Impoverishment via (12); this only deletes the gender feature, so the plural feature will survive:

(17) [+PART, –AUTHOR, –SG, +FEM] → [+PART, –AUTHOR, –SG]

Therefore, if the verb has a suppletive form specified for plural objects, we should expect it to be inserted instead of the default, as it will be more specific. This is exactly what we find, for example with a three-way verb like 'kill' (cf. 4):

(18) eu ngi ba   ngəkep   ngagol
      eu ngi ba   ngə/-eke-p   ngag-l
      3SG DIS FUT   1OBJ-kill.PL.OBJ-IRR   1PL-ACC

---

[7] A note on this representation: remembering that the gender/number features referenced here are those of the verb's object, we just assume that these features are within the appropriate locality domain, and that environments for allomorphy can make reference to them. We have not included any structural information in the conditioning environment, and have simply assumed that this feature is visible at Vocabulary Insertion.

      'He will kill us.'

The morphological behavior of verbs with local person objects thus supports the Impoverishment rules for Yelmek introduced in (12).

4.1 Excluding masc = pl ≠ fem?

The question however still remains why Yelmek has no verbs that exhibit a *masculine = plural ≠ feminine* pattern. This is of course easily representable in this system, as shown in the hypothetical vocabulary items shown in (19):

(19) √ROOT ↔ α / [+FEM]
          ↔ β

We should question whether our aim should be to derive this fact, or just state it.

There are a few morphological ways to rule out the possibility of a *masculine = plural ≠ feminine* verb. One option relates to our assumptions on the representation of gender; it could be that the representation of feminine in Yelmek is completely unspecified– that is, that Yelmek gender has a privative MASCULINE/ø contrast in its gender feature inventory, and feminine is really the absence of a gender feature. The benefits of this would be that no lexical item could ever target feminine as a context for allomorph insertion, since it has no formal representation itself. If there is no way to target feminine to the exclusion of other contexts, then masculine and plural objects cannot share an underspecified lexical item that does not also apply to feminine nouns.

However although tempting, other facts make such an analysis less desirable: Yelmek subject agreement morphology clearly realises distinct feminine singular morphology (and thus must be able to target it); and animates assigned feminine on the basis of biological sex are clearly semantic in nature. Any analysis with the representation of feminine gender as the absence of gender features would have these challenges to face.

Another way to approach the question of excluding *masculine = plural ≠ feminine* verbs is to recast the generalisation by noting that Yelmek Vocabulary Items never make reference to the feature value [+FEM]; only ever [–FEM]. We could take advantage of this by introducing another, very general, Impoverishment operation, such as in (20), which always deletes a [+FEM] feature before vocabulary insertion.

    (20) [+FEM] → ø

This approach essentially derives the absence of *masculine = plural ≠ feminine* verbs in the same way as above; if there is no feminine feature at Vocabulary Insertion, then it cannot be targeted as a conditioning environment for insertion. However this is clearly an *ad hoc* solution with no obvious justification, and also has several problems that would need to be addressed, including the need to ensure this operation only occurs with objects (to allow feminine subject agreement). Although such a qualification is imaginable (perhaps represented structurally; [+FEM] deletes only when complement to the verb), we see no real benefits for assuming so. For these reasons, we are hesitant to adopt such approaches that attempt to derive the absence of *masculine = plural ≠ feminine* verbs.

We suggest instead that the synchronic patterns in Yelmek suppletion are likely simply the result of

diachronic processes, rather than representing an underivable absence of gender/number syncretism. Although this type of verbal suppletion conditioned by number and gender is as far as we are aware aside from Yelmek as yet unattested, syncretisms between number and gender in other domains such as agreement morphology do show that *masculine = plural ≠ feminine* is a possible syncretism pattern in a range of languages (i.e. the languages detailed in Kramer 2018); likewise, *masculine ≠ feminine = plural* is not restricted only to Yelmek. German for example also shows this syncretism pattern across several domains such as determiners (in nominative case: masc. *der* – fem. *die* – (neut. *das*) – pl. *die*) and adjectival agreement (nominative: masc. *guter Wein* 'good wine'; fem. *gute Laune* 'good mood'; (neut. *gutes Gelingen* 'good success'); pl. *gute Ideen* 'good ideas').

There is therefore no argument for cross-linguistic syncretism constraints in this domain which reference either gender. Whether it is the notion of default in gender that is the relevant factor, as predicted by Kramer (2018), remains to be seen– what is clear is that masculine/feminine are not the relevant notions. We argue in any case that the Yelmek syncretism patterns do not represent a counterexample to this claim, as long as the notion of default refers to the underspecified gender wrt Vocabulary Items, and not necessarily the gender used for default gender assignment.

5. A syntactic account: an instance of *ABA?

We have argued above that the Yelmek patterns are purely morphological in nature; the *masculine ≠ feminine = plural* patterns observed are due to the Vocabulary Items for verbal stems specifying forms for masculine objects, and an elsewhere form is inserted for all other contexts. It is however worth considering what a syntactic explanation could look like. The generalisation above in (8) (that is, "If the feminine singular is suppletive wrt to masculine singular in Yelmek, so must the plural form be suppletive wrt to the masculine singular") bears a striking resemblance to the types of generalisations discussed in the literature on *ABA patterns (Caha 2009, Bobaljik 2012, McFadden 2018, Smith et al 2018, Moskal 2018, Zompì 2019 a.o.), and on contiguity of syncretism (McCreight and Chvany 1991, Johnston 1996; see also discussion in Caha 2009). These studies discuss unattested patterns of syncretism and suppletion, and argue in many cases that these patterns are in fact unattested because they are underivable, due to the underlying organisational structures of the features involved.

In essentially all cases in the literature, *ABA patterns are derived through a combination of two factors: incremental/cumulative organisation of the relevant features (either structural, or as complex feature bundles); coupled with mechanisms of Vocabulary Insertion whereby several forms compete for insertion, the most specified rule of exponence wins, and Vocabulary Items can be underspecified with respect to the features they realise. Both of these factors are required to ensure that ABA patterns are underivable.

To demonstrate the reasoning of how this derives *ABA, a by now oft-repeated but illuminating example is from Bobaljik (2012) on the absence of ABA patterns in comparative/superlative adjective suppletion. Bobaljik provides evidence suggesting a robust cross-linguistic generalisation that if the comparative form of an adjective is suppletive wrt to the positive form, so must the superlative form be suppletive wrt the positive form. Thus Bobaljik shows we find the patterns in (21)a, b, and c; but d and e (less relevant for our purposes) are unattested.

(21) a. *big – bigger – biggest*   AAA
　　 b. *good – better – best*   ABB
　　 c. *bonus – melior – optimus*   ABC
　　 d. **good – better – goodest*   *ABA
　　 e. **good – gooder – best*   *AAB

Bobaljik argues that *ABA patterns in suppletion are unattested because of the way the underlying structure of the comparative/superlative forms interacts with the mechanisms of vocabulary insertion. He argues that the superlative never attaches directly to an adjective, and instead always properly contains the representation of the comparative, and thus has the structure in (22)b., rather than (22)c.:

　(22)　a.　[[ADJECTIVE] COMPARATIVE]
　　　　b.　[[[ADJECTIVE] COMPARATIVE] SUPERLATIVE]
　　　　c.　*[[ADJECTIVE] SUPERLATIVE]

Assuming this structure in combination with the principles of insertion described above ensures that an ABA pattern cannot arise; no vocabulary item can target the positive and superlative forms of the adjective, without also being inserted for the comparative.

At the risk of belaboring the point, the fact that ABA patterns are underivable in this system stems from the combination of the structure (the superlative as containing the representation of the comparative), and the fact that the spell-out mechanism of Distributed Morphology will always insert the more specified Vocabulary Item when available. Similar approaches are taken to account for the distribution of syncretism in case morphology (Caha 2009), case and number in pronouns (Smith et al 2018), stem allomorphy and case (McFadden 2018), clusivity, (Moskal 2018), a.o.; all account for the systematic absence of ABA by incremental specification of the relevant features to some degree. The combination of these two factors (incremental structure and the "most specified wins") are the necessary ingredients for meaningful statements about the absence of ABA patterns.

The Yelmek data seems at first glance to belong to this phenomenon. Similarly, we could also state our observations in terms of contiguity of syncretism, by assuming a sequence of *masculine (singular) > feminine (singular) > plural*[8], for example: "syncretism between suppletive verbal stems in Yelmek must target contiguous regions of the sequence *masculine (singular) > feminine (singular) > plural*".

The question is therefore whether this reasoning is applicable to the Yelmek data described above; the empirical generalisation as described in (8) certainly could be derived by appealing to a syntactic approach to the patterns observed, by assuming an underlyingly hierarchical structure of the relevant features such that the representation of the feminine properly contains that of the masculine[9], and the plural containing (or selecting) a nominal already maximally specified for gender (i.e. feminine). Such a structure would suggest that *all* plural nouns (regardless of gender) underlyingly have the structure shown schematically in (23):

　(23)　[[[[N] MASC.] FEM.] PL.]

---

[8] Cf. discussion assuming exactly this sequence in Johnston (1996: 20ff, 89ff), particularly based on data from German.
[9] The feminine being more complex structurally could also correlate with the status of masculine as the default gender.

This representation would ensure that no Vocabulary Item could target masculine and plural features without also being inserted in the context of feminine nouns, by the mechanisms outlined above. Indeed Adamson & Šereikaitė (to appear) propose a similar representation of gender (although not linked to number as in (23)) in Lithuanian. However we argue there are several reasons not to assume a structure (23) in Yelmek.

Firstly, the semantics of gender/number in such a structure are questionable, in opposition to a domain like comparative/superlative adjectives. It is unclear how or why the feminine would semantically require the presence of masculine, or plural require feminine without vast modifications, unwarranted besides the justification of the structure in (23).

Secondly, it is also generally assumed that while number can project a NumP phrase, gender does not project its own GenP, and instead gender features reside on other heads– either on N/the root itself, the nominalising *n* head, on the head of the NumP, on D, or distributed between different heads (e.g. Ritter 1993, Alexiadou 2004, Steriopolo & Wiltschko 2010, Kramer 2015, 2016; but cf. Picallo 1991). The exact details or arguments for which analysis is better suited are not essential here, only that it is commonly not assumed that gender in general projects its own phrase. This would further question the apparently phrasal nature of a structure like (23)[10][11].

Furthermore, as feminine singular is the default verbal form, all local person singulars would require at least as much structure as in (24):

(24)   [[[N] MASC.] FEM.]

Again, we regard this approach as highly questionable. Therefore, although the suppletion patterns in Yelmek descriptively do seem to constitute a *ABA pattern, we argue that it is very unlikely to be the result of the interaction of featural organisation and spell-out mechanisms as argued for in other domains, and thus does not constitute a meaningful *ABA pattern. We therefore argue that a purely morphological, rather than morphosyntactic basis is the right approach for the Yelmek patterns.

6. Conclusions

We have argued here that despite first impressions, patterns of verbal suppletion in Yelmek do not represent a counterexample to the prediction made in Kramer (2018), repeated here:

([3])   In a language where gender and number are simultaneously syncretic, the VI [Vocabulary Item] used for plural agreement will be the same VI used for default gender agreement.

If we accept a mismatch between the default status of genders wrt to gender assignment on the one hand and default/underspecified verbal stem on the other, then we can easily account for the

---

[10] We also wonder whether *ABA patterns in gender/number are expected in frameworks with a stronger commitment to the phrasal representation of features, e.g. Nanosyntax, but will not be investigating this further here.

[11] Although it is possible that a featural, rather than structural approach as in Adamson & Šereikaitė (to appear) could overcome this issue. Similarly, their approach of treating masculine as [GENDER] and feminine as [GENDER][FEMININE] could be a way around the semantic issue raised.

Yelmek data. The only assumption we must make is that default gender (i.e. an [–FEM] feature) is truly assigned to nominals with unknown gender, rather than those nominals being left without a gender feature. This suggests that what counts as the default gender wrt convergent to gender patterns is not necessarily which gender is default in gender assignment, but rather relates to underspecification for gender at some level. This is also in line with other recent work, suggesting there is a need for a split in the notion of default in gender along these lines (Adamson & Šereikaitė, to appear).

We have argued for a morphological approach to the Yelmek patterns, in that the absence of *masculine = plural ≠ feminine* verbs relates only to the absence of any Vocabulary Items making reference to a [+FEM] valued feature, rather than a morphosyntactic approach in line with much other work on *ABA patterns. We have contrasted this approach to with several other possible analyses, and have argued that patterns of suppletion do not represent a generalisation about syncretism patterns extendable to other languages. As Yelmek is the only language we are aware of described in the literature with this type of verbal suppletion conditioned by gender as well as number, the extent to which this pattern is common in this domain is unclear. To what extent the absence of a [+FEM] feature in conditioning Yelmek verbal allomorphy is related to markedness however remains to be explored in further studies on the role of default values in syncretism.

References

Adamson, L. & Šereikaitė, M. (to appear). Gender representation and defaults in Lithuanian. In *Glossa: a journal of general linguistics.* Url: lingbuzz/004775

Arka, I. W. (2012). Verbal number, argument number and plural events in Marori. In M. Butt & T. Holloway King (Eds.), *Proceedings of the LFG12 conference*. Stanford: CSLI Publications.

Baker, M. (2011). When agreement is for number and gender but not person. *Natural Language and Linguistic Theory* 29. 875-915.

Barth, D. & Evans, N. (Eds.). (2017). *Social Cognition Parallax Interview Corpus (SCOPIC)*. Language documentation & conservation special publication No. 12. Honolulu: University of Hawai'i Press. http://hdl.handle.net/10125/24739

Bobaljik, J. (2012). *Universals in comparative morphology: Suppletion, superlatives, and the structure of words.* MIT Press.

Bobaljik, J. & Harley, H. (2017). Suppletion is local: Evidence from Hiaki. In G. Piggot & et al (Eds.), *The structure of words at the interfaces.* Oxford: Oxford University Press.

Caha, P. (2009). *The nanosyntax of case.* University of Tromsø PhD Thesis. http: //hdl.handle.net/10037/2203

Foley, W.A. (1986). *The Papuan Languages of New Guinea*. Cambridge: Cambridge University Press.

Greenberg, J. (1963). Some universals of grammar with particular reference to the order of meaningful elements. In J. Greenberg (Ed.), *Universals of gramma*r (pp. 73–113). Cambridge: Cambridge University Press.

Gregor, T. (in prep.). *A documentation and description of Yelmek.* PhD thesis, Australian National University and the Centre of Excellence for the Dynamics of Language.

Gregor, T. (2019). *Verbal suppletion in Yelmek*. Final oral presentation, given at the ANU 17th of May 2019.

Harley, H. (2014). On the identity of roots. *Theoretical linguistics*, 40(3-4). 225–276.

Harley, H., Tubino, N., & Haugen, J. (2016). Locality conditions on suppletive verbs in Hiaki. In Gribanoa, V. & S. Shih (Eds.) *The Morphosyntax-phonology connection: Locality and directionality at the interface*. Oxford: OUP.

Harley, H. & Ritter, E. (2002). Person and number in pronouns: A feature-geometric analysis. *Language*, 78, 482–526.

Johnston, J. (1996). *Systematic homonymy and the structure of morphological categories. Some lessons from paradigm geometry.* University of Sydney PhD Thesis.

Kramer, R. (2018). A novel kind of gender syncretism. In Mathieu, É., Dali, M., and Zareikar, G. (Eds.) *Gender and noun classification*. Oxford: Oxford University Press.

Kramer, R. (2016). The location of gender features in the syntax. *Language and linguistics compass* 10. 661–677.

Kramer, R. (2015). *The morphosyntax of gender*. Oxford: Oxford University Press.

McCreight, K. & Chvany, C. (1991). Geometric representation of paradigms in a modular theory of grammar. In F. Plank (Ed.), *Paradigms: The economy of inflection*. Berlin, New York: Mouton de Gruyter.

McFadden, T. (2018). *ABA in stem-allomorphy and the emptiness of the nominative. *Glossa: a journal of general linguistics*, 3(1).

Moskal, B. (2018). Excluding exclusively the exclusive: Suppletion patterns in clusivity. *Glossa: a journal of general linguistics*, 3(1).

Paster, Mary. (2006). Aspects of Maay phonology and morphology. *Studies in African Linguistics* 35. 73-120.

Picallo, M. C. (1991). Nominals and nominalizations in Catalan. *Probus* 3: 279-316.

Plank, F. & Schellinger, W. (1997). The uneven distribution of genders over numbers: Greenberg Nos 37 and 45. *Linguistic Typology*, 1(1): 53–101.

Ritter, E. (1993). Where's Gender? *Linguistic Inquiry*, 24: 795–803.

Smith, P., Moskal, B., Xu, T., Kang, J. & Bobaljik, J. (2018). Case and number suppletion in pronouns. *Natural Language & Linguistic Theory*, 1–73.

Steriopolo, O. & Wiltschko, M. (2010). Distributed GENDER hypothesis. In G. Zybatow et al. (Eds.), *Formal studies in Slavic linguistics: Proceedings of the Formal Description of Slavic Languages* 7.5. New York: Lang, 155–172.

Veselinova, L. (2006). *Suppletion in verb paradigms*. Amsterdam: Benjamins.

Weisser, P. (2019). Telling allomorphy from agreement. *Glossa: a journal of general linguistics* (special collection: GLOWing papers 2018), 4(1).

Zompì, S. (2019). Ergative is not inherent: Evidence from *ABA in suppletion and syncretism. *Glossa: A Journal of General Linguistics*, *4*(1), 73. DOI: http://doi.org/10.5334/gjgl.816