Excluding exclusively the exclusive: Suppletion patterns in clusivity

Beata Moskal
Goethe-Universität Frankfurt
moskal@em.uni-frankfurt.de

Abstract In this paper, I investigate the suppletion patterns that are found in languages that make a clusivity distinction. I will show that in the triple 1SG-1EXCL-1INCL, ABA patterns do not arise, consonant with other work on suppletion patterns (Bobaljik 2012, Smith et al. 2016). That is, it is not possible for the exclusive pronoun to supplete on its own whilst the singular and inclusive share a common base. All other patterns are attested. I will argue that the lack of ABA patterns supports the view that the inclusive is the most marked category in this set (Noyer 1992, Siewierska 2004, Cysouw 2003, a.o.), and propose that there is a containment relation such that the feature set that makes up the inclusive properly contains the features that form the exclusive, following the reasoning laid out in Bobaljik (2012). I further consider the makeup of person features, and argue that the lack of ABA patterns in clusivity suggest that clusivity features are privative, rather than binary (*cf.* Harbour 2016).

Keywords: morphology; suppletion; clusivity; *ABA; person; typology.

1 Introduction

Suppletion has been shown in recent work to be quite regular in the sense that although we may not be able to predict which exact lexical item in a given language will be suppletive, we can predict in which ways suppletion is constrained. For instance, which elements can serve as a context for suppletion have been shown to be delimited in terms of locality restrictions (see Adger et al. 2003, Embick 2010, Bobaljik 2012, Moskal 2015b,a, Merchant 2015, Moskal & Smith 2016, i.a).

In addition, we have a good idea of what kind of suppletive patterns we can expect. For instance, in adjectival suppletion, Bobaljik (2012) shows that in the triples adjective-comparative-superlative, the only patterns found

are AAA (no suppletion), such as *l*ong-longer-longest, ABB (where the comparative and superlative supplete together), such as *b*ad-worse-worst, and ABC (where the comparative and superlative are both suppletive relative to the adjective, but also with respect to each other), such as in Latin *b*onus-melior-optimus 'good-better-best'. AAB patterns (hypothetical 'good-gooder-best'), where only the superlative is suppletive, are not found, nor are ABA patterns (hypothetical 'good-better-goodest'), where the comparative suppletes on its own. AAB patterns are not universally unattested, however, and have been found in other suppletive contexts (see Smith et al. 2016 for case and number, and below for clusivity). In contrast, a remarkably strong result is that ABA patterns are almost universally unattested, where in addition to the lack of ABA patterns in adjectival suppletion in Bobaljik (2012), they also do not seem to be attested in case or number (Smith et al. 2016) or in syncretism in pronouns (Vanden Wyngaerd 2016). In this paper, I add another set of data that supports the observation that ABA patterns do not arise, namely in clusivity-driven suppletion.

The structure of the paper is as follows. In section 2, I first provide a brief overview of clusivity and introduce the main observation of the paper: the lack of ABA suppletion patterns in clusivity. Next, I briefly summarise how suppletion serves as a tool for identifying structural representations (Bobaljik 2012, Smith et al. 2016). In section 4, I analyse the main clusivity suppletion patterns, showing how ABA is underivable in the proposed system and, as such, predicted to be unattested; section 4.1 discusses apparent counter-examples to this claim. Section 5 deals with the issue of markedness and its role in suppletion. In section 6, I discuss the consequences of the proposal here, and compare it in particular to assumptions about the representation of person in Harbour (2016). Section 7 concludes the paper.

2 Clusivity

As visualised in (1), the inclusive/exclusive distinction captures the difference whether the addressee (or addressees, represented by 2) are included or excluded from the set of referents which also contains the speaker, 1.[1] Note that 3 represents those who are neither speaker nor hearer (i.e. third person referents).

[1] In the following I use this traditional use of inclusive/exclusive; for more distinctions involving inclusion or exclusion of persons, see Siewierska & Bakker (2005).

	SG	PL
1	(in)ten	
1EXCL		(in)to'on
1INCL		(in)to'one'ex

Table 1: Itzaj Maya first person pronouns.

(1) Inclusive: 1 + 2(+3)
Exclusive: 1 + 3

When the inclusive is used, the addressee is crucially included, while the exclusive indicates that the addressee is excluded. This is a distinction that is frequently seen across languages (Cysouw 2003, Filimonova 2005, Siewierska & Bakker 2005). While the inclusive/exclusive distinction can be found in verb agreement affixes and possessive affixes as well, I here limit myself to inclusive/exclusive plural independent pronouns and focus on a binary number distinction between singular vs. non-singular.[2] The pronominal database consulted for this project is Norval Smith's database (http://languagelink.let.uu.nl/fpps), which encompasses 455 languages in total. In the Appendix, I listed the subset of languages from the database that make a clusivity distinction.

As mentioned above, morphological marking of the distinction between inclusive and exclusive (first) person (plural) is relatively frequent cross-linguistically (Cysouw 2013) and either the inclusive form or the exclusive form can be morphologically realised (Harbour 2011, 2016). Indeed, in table 1, we see that in Itzaj Maya (Hofling 2000) the inclusive has an additional morpheme *-e'ex* compared to the exclusive form. In contrast, in Limbu (van Driem 1987) it is the exclusive that is expressed by an additional morpheme *-ge* compared to the inclusive form (see table 2).

However, as noted by others, the first person inclusive has been proposed to be a marked category (Noyer 1992, Siewierska 2004, Cysouw 2003, LaPolla 2005, a.o.).[3] For instance, in accordance with the diagnostics in Greenberg (1966) for marked categories involving at least as many morphemes as the corresponding unmarked categories, while exclusive mark-

[2] At this point, I leave the distinction between singular-plural and minimal-augmented systems aside (though see the discussion on Mangarayi in section 4.1), partially due to the fact that the database I use does not distinguish between the two types of systems. In addition, clusivity distinctions are also attested in other numbers, such as dual and trial (Siewierska 2004) as well as unit-augmented, but I leave these to future research.

[3] See, however, Cormier (2005) for an opposing view where it is the exclusive that is more marked than the inclusive.

	SG	PL
1	(a)ŋga	
1EXCL		anige
1INCL		ani

Table 2: Limbu first person pronouns.

	SG	PL
1	wa	
1INCL		wa
1EXCL		cu

Table 3: Canela-Krahô first person pronouns.

ing is attested, inclusive marking seems to be more common (*cf.* Harley & Ritter 2002). It is important to stress, though, that whilst there may be a trend towards inclusive marking as opposed to exclusive marking, both types of clusivity can be morphologically marked (Harbour 2016) (see also section 6 on the role of overt encoding).

A second asymmetry between the inclusive and exclusive is noted by Cysouw (2013). There are a few languages that have a special pronoun for the inclusive, but the marking of the exclusive is identical to the first person singular (see also Sokolovskaya 1980); for instance, in Canela-Krahô (Popjes & Popjes 1986), table 3, we see that the inclusive is expressed by *cu* but for the singular as well as the (plural) exclusive the same morpheme is used: *wa*.

This situation, where the exclusive is syncretic with the first person singular, is relatively common; it has been attested among native American languages, the Papuan languages of New Guinea and there are various incidental examples (Cysouw 2005). Conversely, the reverse situation is unattested; that is, we do not observe the use of an identical morpheme for the (plural) inclusive and first person singular, while having a separate special morpheme for exclusiveness. It is important to note that in this case, the asymmetry does not seem to be a trend but genuinely unattested.[4]

A third asymmetry, noted in Moskal (2014), is that whilst pronoun suppletion in the context of solely the inclusive is attested in a variety of lan-

[4] However, see Cysouw (2005) for a single purported case in Binandere where the suffixes for both first person singular and (plural) inclusive are *-ana*, while the suffix for the exclusive is *-ara*. This syncretism seems to be a recent development and Cysouw (2005:77) suggests it might be "an extension of an original first-person singular reference of *-ana*."

	SG	PL	DU
1	ju		
1EXCL		juŋo	juŋole
1INCL		jude	judele
2	juma	jumi	jumile
3	ina	judy	judyle

Table 4: Ayiwo pronouns.

guages, we do not seem to observe pronoun suppletion only in the context of the exclusive. Suppletion refers to the phenomenon where a single morphological item is associated with two phonologically unrelated forms, the choice of form depending on the morphosyntactic context. Canonical items from English include *good-better-best*, *bad-worse-worst* and *go-went*.

Cast here as 1SG-1EXCL-1INCL triples, we observe that although there are five logical patterns, only four out of these are attested: AAA, ABB, ABC and AAB are all possible patterns, but ABA is crucially unattested. As mentioned above, in the Appendix the full list of languages from Norval Smith's database that make a clusivity distinction is given, organised according to their suppletive behaviour.

First consider a pattern where the base of a free pronominal remains constant, as exemplified in Ayiwo (Smith 2011) in table 4. Here, we see that the pronominal base is always realised as *ju* to which various suffixes are attached in order to derive the relevant pronominal form.[5] Crucially, when a morpheme remains constant throughout a morphological derivation this constitutes an AAA pattern.

An ABB pattern is exemplified by the pronominal system of Ura (Smith 2011), given in table 5. Here we see that the first person singular form is *yau* but that there is a clearly identifiable base *gi-* shared by the exclusive and inclusive plural forms, though each has their own suffix: *-m* in the exclusive and *-t* in the inclusive.

Note that suppletion in the context of both the inclusive and exclusive is also attested. This situation is exemplified in table 6 by Dan (Smith 2011), where the bases for 1.SG, 1.EXCL and 1.INCL are phonologically entirely unrelated; as such, the Dan data illustrates an ABC pattern.

Turning to the final attested pattern, AAB, consider data from Evenki (Nedjalkov 1997) in table 7. Here we observe pronoun suppletion in the

[5] The irregularity of 3.SG *ina* is not pertinent to the discussion, and I leave open whether this is a case of suppletion or morpho-phonological readjustment.

	SG	PL
1	yau	
1EXCL		gim
1INCL		git
2	ga	ŋimi
3	iyi	leil

Table 5: Ura pronouns.

	SG	PL
1	yé, yi	
1EXCL		má, ma
1INCL		kúé, ko
2	bá, bi	ká, ka
3	wà, wo	yà, yø

Table 6: Dan pronouns.

context of the inclusive but not in the context of the exclusive. The form for first person singular decomposes into a base *b-* for first person followed by a suffix *-i* for the singular. The latter morpheme also surfaces in the second person singular, where *s-* is the second person base, which is followed by *-i* in the singular. In the plural forms, we see that the bases in first and second person are retained but that the number information is expressed by the suffix *-u*. In contrast, the plural inclusive form *mit* is entirely distinct from the first person base in the singular and exclusive.

In contrast to a situation in which suppletion only occurs in the context of the inclusive, the reserve situation, ABA, in which suppletion occurs only in the context of the exclusive is unattested in my survey; three (types of) apparent counterexamples to this claim are discussed in section 4.1.

	SG	PL
1	bi	
1EXCL		bu
1INCL		mit
2	si	su
3	nungan	nungartyn

Table 7: Evenki pronouns.

POSITIVE	COMPARATIVE	SUPERLATIVE	
long	**long**er	**long**est	AAA
good	**bett**er	**be**st	ABB
bonus	**mel**ior	**opt**imus	ABC

Table 8: Attested adjectival patterns.

POSITIVE	COMPARATIVE	SUPERLATIVE	
good	**bett**er	**good**est	ABA
good	**good**er	**be**st	AAB

Table 9: Unattested adjectival patterns.

In sum, we have seen three instances of an asymmetry between the inclusive and exclusive. (i) The inclusive seems more often marked by an additional morpheme than the exclusive. (ii) The exclusive can be syncretic with first person singular, but the inclusive never is syncretic with first person singular. (iii) Suppletion in the context of the exclusive without also having a suppletive variant in the inclusive is unattested.

3 Suppletion

Recent work on suppletion (Bobaljik 2012, Moskal 2015a, Smith et al. 2016, i.a.) has shown that suppletion, rather than being a merely descriptive term, can serve as a detector of morphological structure. Here, I briefly recapitulate the arguments from Bobaljik (2012).

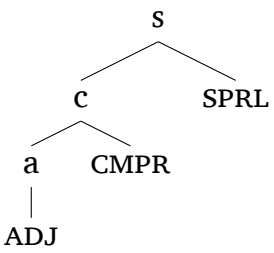
In a study of 73 distinct adjectival cognate triples, Bobaljik shows that not all suppletion patterns in comparative morphology are attested. Specifically, the patterns in table 8 are attested in languages, whereas the apparently legitimate and *a* priori conceivable patterns in table 9 are unattested. Whilst both ABA and AAB are unattested in adjectival suppletion, AAB (greyed out) is attested elsewhere as discussed above, and as such the current paper does not discuss the absence of this pattern in adjectival suppletion any further (but see Bobaljik 2012 how to exclude AAB from adjectival suppletion patterns). The crucial contrast discussed in this paper is the absence of ABA as opposed to the other logically possible patterns.

Bobaljik shows that the absence of ABA patterns is accounted for if we assume (i) the containment hypothesis, and (ii) late insertion. Specifically, the containment hypothesis is formulated in (2):

(2) The containment hypothesis (adjectives): The superlative always properly contains the comparative.

In effect, (2) proposes that it is a universal property of languages that if there is a superlative in the structure, then there necessarily must be a comparative in the structure. That is, the structure for any given superlative is as in (3).

(3)



The second ingredient for ruling out the unattested ABA pattern is the assumption that syntactic structure is the input to morphology, which then has the task of converting syntactic structure into phonological material (Vocabulary Insertion, VI) (Distributed Morphology, DM; Halle & Marantz 1993). Crucially, phonological substance is provided post-syntactically ('late insertion') and occurs cyclically starting from the most deeply embedded element (Bobaljik 2000). In such a framework suppletion is modeled as contextual allomorphy: a feature (set) has a context-free default exponent, but in a more specific context a different exponent takes precedence (Bobaljik 2012). Consider the VI-rules in (4) and (5); these are the rules that are relevant to the abstract item $\sqrt{\text{GOOD}}$. Whilst (5) has no restrictions with regard to its application, (4) applies in the context of the comparative (and *p*er the containment hypothesis the superlative as well).

(4) $\sqrt{\text{GOOD}} \Leftrightarrow$ be(tt) / _] CMPR]

(5) $\sqrt{\text{GOOD}} \Leftrightarrow$ good

Furthermore, *p*er the Elsewhere principle (Kiparsky 1973) the more specific VI-rule in (4) will be preferred over the less specific VI-rule in (5). That is, given that (4) makes reference to the more specific environment of the comparative, it must be employed in that context; the VI-rule in (5) will apply as a default but given the existence of the rule in (4) crucially not in the context of the comparative. The containment hypothesis combined with late insertion gives us the tools to derive *ABA: given that the most specific VI-rule must be used, and each superlative must contain a comparative, if the comparative suppletes the superlative necessarily must do so too and it

1SG	1EXCL	1INCL		
ju	**ju**ŋo	**ju**de	AAA	Ayiwo (Smith 2011)
yau	**gi**m	**gi**t	ABB	Ura (Smith 2011)
yé, yi	**má, ma**	**kúé, ko**	ABC	Dan (Smith 2011)
bi	**bu**	**mit**	AAB	Evenki (Nedjalkov 1997)

Table 10: Attested clusivity patterns in free pronouns.

1SG	1EXCL	1INCL	
bi	**mit**	**bu**	ABA

Table 11: Unattested clusivity patterns in free pronouns.

cannot 'revert back' to the default. In sum, suppletion data provides crucial evidence for morphological structure, in Bobaljik's study the structure of adjectives as in (3).

4 Clusivity Analysis

Turning back to clusivity-driven suppletion in free pronouns, recall that the following asymmetry was introduced: whilst AAA, ABB, ABC and AAB are attested (table 10), ABA is unattested (table 11) (see section 4.1 for three (types of) apparent counter-examples).

Consider first the notational representations for person in table 12 (McGinnis 2005, Bobaljik 2008; see also Harley & Ritter 2002, Cysouw 2003, Nevins 2007, Harbour 2011). Following McGinnis (2005) and Bobaljik (2008) in particular, I assume that the privative features in table 12 are relevant for the representation of person. It should be noted here that the current proposal assumes for expository purposes that third person is featurally represented as the absence of any person features. However, Nevins (2007) argues convincingly that in order to analyse Person-Case Constraint (PCC) effects reference needs to be made to third person, which in table 12 is impossible since it is the absence of any feature. The current proposal is not necessarily at odds with Nevins' analysis, and I am not excluding a feature [±participant], which would be additional to the features proposed in table 12.[6]

Taking number into account, this then leads to the representations for first and second person pronouns in languages which make a clusivity dis-

[6] See also section 6 for some discussion on the privative nature of the features assumed here.

notational	*privative*
1+2 / 1+2+3	[speaker, hearer]
1 / 1+3	[speaker]
2 / 2+3	[hearer]
3	[ ] (unspecified)

Table 12: Representation of person.

1SG	[speaker, +singular]
1EXCL	[speaker, -singular]
1INCL	[speaker, hearer, -singular]
2SG	[hearer, +singular]
2PL	[hearer, -singular]

Table 13: Representation of first and second person, including a singular-plural contrast.

tinction as in table 13; here I assume a simple binary [±singular] for singular-plural systems.

On the assumption that, at least morphologically, [+singular] is unmarked (Bale et al. 2011, Smith et al. 2016), we see that 1SG is the least marked first person value. With regard to the relative markedness of the inclusive and exclusive, we have seen earlier proposals that the inclusive is more marked than the exclusive (Noyer 1992, Siewierska 2004, Cysouw 2003, i.a.). This then leads to the markedness hierarchy in (6).

(6) 1SG < 1EXCL < 1INCL

Previously (Moskal 2014), I pursued the hypothesis that suppletion is conditioned by markedness as follows. According to Calabrese (1995, 2005), phonological processes can be sensitive to all values, marked values or contrastive values of a feature (see also Nevins (2007) for an extension of this idea to morphology in order to analyse PCC effects, and Bobaljik (2015) for an interpretation of this in order to parametrise adjacency). Applying this to (6), I then proposed that either marked features can govern suppletion, or both unmarked and marked features can govern suppletion, but that unmarked features alone crucially cannot govern suppletion. When only marked features govern suppletion, the (marked) 1INCL is suppletive

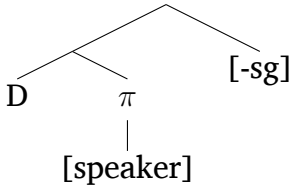
but the (unmarked) 1SG and 1EXCL are not (AAB). When both unmarked and marked features can govern suppletion, both (marked) 1INCL and (unmarked) 1EXCL are suppletive (ABB, ABC). Crucially, ABA is unattested, since this configuration would require only unmarked features to be able to govern suppletion.

However, in this paper, I propose that we can derive the clusivity suppletion patterns through containment. Specifically, on the basis of table 13, we can then formulate another containment hypothesis, given in (7), which applies to clusivity.[7]

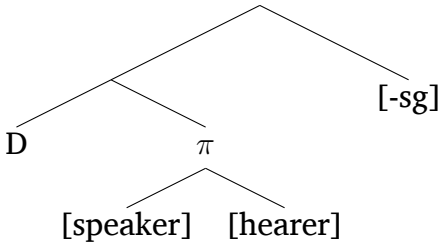
(7) Containment hypothesis (clusivity): The inclusive always properly contains the exclusive.

Crucially, the inclusive properly contains the exclusive, as can be seen in the representation for the exclusive in (8) and that for the inclusive in (9).[8]

(8)



(9)



Turning to the attested patterns, we can analyse them as follows. First, starting off with the AAA pattern in Ayiwo (table 4), the VI-rules for the first person pronouns would be the ones in (10). No suppletion takes place and we observe *ju-juŋo-jude* with a stable pronominal base as the 1SG-1EXCL-1INCL triple.

(10) a. [speaker, hearer, -sg] ⇔ -de

[7] Note that we can make a parallel prediction for second person and clusivity, where we have the triple 2SG-2PL-1INCL; however, in this paper I only discuss first person containment, and leave second person pronouns for future research.

[8] I assume the structures in (8) and (9) to be the basic morpho-syntactic structures, prior to operations such as fusion. Also, 'D' is merely used as a label for a pronominal base and has no theoretic import.

b. [speaker, -sg] ⇔ -ŋo
c. D ⇔ ju

Next, we discuss the ABB pattern exemplified here by Ura (Smith 2011) (see table 5). The VI-rules for first person pronouns are give in (11); crucially, there is a default realisation of [speaker] in (11c), and a more specific rule that refers to the non-singular context in (11a) and as such targets both the exclusive and the inclusive to have a single base. The rules converge on the Ura triple *yau-gim-git*.

(11) a. [speaker] ⇔ gi / _] -sg]
b. [-sg] ⇔ -t / _] hearer]
c. [speaker] ⇔ yau
d. [-sg] ⇔ -m

Turning to ABC, exemplified by Dan in table 6, the VI-rules for first person pronouns are as in (12). We see a context-free default rule in (12c), a rule that targets the specific environment of a speaker in (12b), which as such is applicable in both exclusive and inclusive contexts, but since an even more specific rule (12a) exists, (12a) is used for the inclusive, but (12b) is used for the exclusive. This results in the Dan triple *yé/yi-má/ma-kúé/ko*.

(12) a. [speaker, hearer, -sg] ⇔ kúé, ko
b. [speaker, -sg] ⇔ má, ma
c. [speaker] ⇔ yé, yi

The final pattern, AAB was exemplified by Evenki in table 7. The Evenki first person pronoun VI-rules are listed in (13), where we see that there is a specific rule for the inclusive, (13a), but that 1EXCL and 1SG both are subject to (13b) and are realised with a pronominal base *b-*. This leads to the triple *bi-bu-mit* in Evenki.

(13) a. [speaker, hearer, -sg] ⇔ mit
b. [speaker] ⇔ b-
c. [-sg] ⇔ -u
d. [+ sg] ⇔ -i

Crucially, ABA is ruled out as a possibility, since any suppletive rule making reference to an exclusive environment ([speaker, -sg]) also necessarily covers an inclusive environment ([speaker, hearer, -sg]). As such, we can have (only) a rule referencing [speaker] and [-sg], leading to an ABB pattern (see Ura), or an even more specific rule referencing [speaker, hearer,

	SG	PL
1	ji	
1EXCL		isi
1INCL		chiji
2	chi	chipen

Table 14: Dolakha Newar pronouns.

-sg], leading to an ABC pattern (see Dan), but there is no set of VI-rules that would converge on an ABA pattern.

In sum, we have seen that the suppletion patterns support a structural representation for first person exclusive and inclusive as in (8) and (9). This account crucially relies on the absence of ABA patterns in the study, and in the next section I discuss purported counter-examples to the claim that ABA is unattested.

4.1 Counter-examples

The counter-examples can be divided into three types: compound pronouns, a single recurring construction occurring in various (cognate) Carib languages and the case of Mangarayi.

Turning first to compound pronouns, consider the pronominal paradigm of Dolakha Newar (Genetti 2007) in table 14.[9] The Dolakha Newar data shows a suppletive form in the exclusive, *isi*, but the inclusive *chiji* transparently contains the singular form *ji* to which a morpheme *chi* is added. Taken in isolation, this would constitute a clear ABA pattern. However, the *chi* morpheme actually corresponds to the second person singular, as can be seen in table 14. As such, the inclusive form in Dolakha Newar is a compound pronoun, and appears to be transparently composed of a morpheme for hearer, *chi*, and a morpheme for speaker, *ji*. Indeed, although usually the two person features that the inclusive contains are not expressed separately, from the representation in (9) we see that this simply is a logical possibility that the system provides. This then leads to the VI-rules in (14) that are active in Dolakha Newar for first and second person pronouns.

(14) a. [speaker] ⇔ isi / _] -sg]
b. [speaker] ⇔ ji

[9] It is unclear whether there is a separate category of third person pronouns in Dolakha Newar or that demonstratives function as third person pronouns (Genetti 2007); since this is orthogonal to the discussion here, I do not list the third person pronouns in table 14.

c. [hearer] ⇔ chi
d. [-sg] ⇔ -pen

Though intuitively on the right track, these VI-rules make a wrong prediction for the realisation of the inclusive form. Firstly, the inclusive does not bear any number marking: the form literally only contains the morphemes for (singular) speaker and (singular) hearer. Secondly, since the exclusive is a subset of the inclusive, the suppletive rule in (14a) for the exclusive environment applies in the exclusive as well as the inclusive. As such, the VI-rules in (14) lead us to expect a form *chiisipen* with both the suppletive form for [speaker] and a plural marker. Both incorrect predictions can be remedied by positing an impoverishment rule (Noyer 1992) in Dolakha Newar, which deletes the plural in the inclusive (see (15)).[10][11]

(15) [-sg] → ∅ _] sp,hr]

The impoverishment rule in (15) nullifies the containment relation and, as such, the 1SG-1EXCL-1INCL paradigm in Dolakha Newar does not constitute a legitimate triple any more.

However, we expect that not all languages have such an impoverishment rule. Indeed, Tok Pisin (Verhaar 1995, Smith 2002) also displays a compound pronoun of first and second person, as can be seen in table 15. Interestingly, here we see that the non-singular number morpheme *-pela*, albeit optionally, is realised in the inclusive plural.[12] The current account makes a clear predication that in languages which retain the plural the 1SG-1EXCL-1INCL paradigm constitute triples subject to *ABA, and that if the exclusive is suppletive, then the inclusive must be as well. The Tok Pisin data, however, do not show any suppletion, thus being in line with the hypothesis here, but I leave a systematic study into compound pronouns for future research.

Turning to the second type of counter-examples to the *ABA generalisation, consider data from Macushí (Abbott 1991) in table 16. We see that

[10] Note that we cannot posit a null realisation of the plural morpheme ([-sg] ⇔ ∅ _] sp,hr]), since then we would still predict the suppletive form to arise: *chiisi*.

[11] It should be noted here that impoverishment rules exclusively apply in the morphology and do no affect semantic interpretation; as such, the inclusive is of course still interpreted as a plural.

[12] According to Verhaar (1995), the form *yumipela* is non-existent, but according to Smith (2002: 83) *yumipela* "occurs from time to time". Noteworthy here is that the optionality of *-pela* only holds for the plural, whilst it is obligatory in the other non-singular numbers; I leave open why there seems to be a tendency for plural inclusive compound pronouns to not express their number morpheme.

	SG	PL	DU	TR
1	mi			
1EXCL		mipela	mitupela	mitripela
1INCL		yumi, yumipela	yumitupela	yumitupela
2	yu	yupela	yutupela	yutripela
3	em	ol	tupela	tripela

Table 15: Tok Pisin pronouns.

	SG	PL	DU
1	uurî		
1EXCL		anna	
1INCL		uurî'kon	uurînîkon
2	amîrî	amîrî'nîkon	
3PROX	mîserî	insemoro	
3MED	mîîkîrî	inkamoro	

Table 16: Macushí pronouns.

the first person singular and the inclusive clearly show a base *uurî*, whilst the exclusive is realised as a phonologically unrelated form *anna*, thus *prima facie* constituting a clear ABA pattern.

This exclusive *anna* form has clear cognates in various Cariban languages (see Meira 2002), and as such represents a single data point (see Bobaljik 2012: section 1.3 for discussion). Nonetheless, this is a robustly attested pattern in this family, where the exclusive is realised suppletively, whilst the inclusive shares the base with 1SG. However, there is some reason to be suspicious whether *anna* is a true pronoun. Firstly, unlike all other first and second pronouns, at least in Macushí, it appears only as a free form and does not have an affixal variant, which as such sets it apart from all other forms. Secondly, it does not seem to control plural agreement on the verb, which seems to hold for all Cariban languages (Meira 2002). Focusing on the latter argument, consider the sentences in (16)-(18) from related Waiwai (Hawkins 1998), where the cognate *amna* in (18) does not control plural (collective) agreement on verbs, appearing only with singular marking (Hawkins 1998). In (16) and (17), we see that the verb contains a collective suffix *-cow* when there is a collective argument present, a second plural object (in (16)) or a third person subject (in (17)). However, in (18) the 'exclusive' does not result in the collective suffix *-cow* on the verb.

(16) K-en-cow so yuruma
1 + 2O-see-COLL + TP COLL duck
'The duck saw us(.incl).'

(17) Tooto komo nî-wînn-tîka-cow
people COLL 3S-sleep-COMPL-TP + COLL
'All the people went to sleep.'

(18) Pahxaxa amna ø-c-e-sî
tomorrow 1 + 3PRO 3S-go-SF-INP
'Tomorrow we(.excl) will go.'

The fact that *amna* does not participate in verbal agreement, I speculate, is indicative of it having a different structure than the other pronouns in the language, and should not be seen as a genuine counter-example to the proposal here. The different structure has the dual effect that it prevents the pronoun from reducing into an affixal form (*cf.* Cardinaletti & Starke 1999) and makes its phi-information inaccessible to agreement. In fact, this view that *amna* has an different structure seems to be supported by Meira (2002), who notes that the pronoun is treated syntactically as if it were third person, and "one wonders if it could have been an old non-possessible noun (cf. e.g. Brazilian Portuguese *a gente* 'we', literally 'the people')" (Meria 2002:257). Though Meira does not chart a particular diachronic path, the quote is certainly suggestive of the opinion that this form is not a true pronoun. I do not have anything further to add to what the structure of *amna* actually is, which I leave to further research. What is important for now is that there seems to be enough reason to be suspicious of *amna* being a true pronoun, and we may put it aside, since it should not form part of a true triple pattern.

As to the analysis of the Macushí data in table 16, I posit the features in table 17 for first and second person pronouns, [±augmented] is needed to distinguish between dual and plural. Note that *anna* is not listed, since it does not represent a true pronoun. As such, the Cariban languages do not have a pronoun with the structure in (8), and as such they no longer have 1SG-1EXCL-1INCL triples.

Finally, this leaves us with one more problematic case that I encountered; consider the data from Mangarayi (Merlan 1989) in table 18. Although for the most part I have ignored the distinction between singular-plural and minimal-augmented systems (see footnote 2), here it is clear that we are dealing with a minimal-augmented system and hence it is represented as such.

notational	*form*	*features*
1	uurî	[speaker, +sg, -augm]
1+2du	uurî'kon	[speaker, hearer, -sg, -augm]
1+2pl	uurînîkon	[speaker, hearer, -sg, +augm]
2	amîrî	[hearer, +sg, -augm]
2pl	amîrî'nîkon	[hearer, -sg, +augm]

Table 17: Featural representation of Macushí first and second person pronouns.

	MINIMAL	AUGMENTED	UNIT-AUGMENTED
1.EXCL	ŋaya	ŋiḷa	ŋir
1.INCL	ŋi	ŋaḷa	ŋar
2	ñaŋgi	ṇuḷa	ṇur

Table 18: Mangarayi pronouns.

Following the number representation in Harbour (2016), I assume the features in table 19 for a minimal-augmented-unit-augmented system.[13] The relevant triple here is 1EXCL.MIN-1EXCL.AUGM-1INCL.AUGM, on the assumption that [+minimal] is unmarked (*cf.* [+singular] in section 4), and given that 1EXCL.AUGM is a subset of 1INCL.AUGM.[14] As such, the triple in Mangarayi is *ŋaya-ŋiḷa-ŋaḷa*, where we see that the base is *ŋa* in the first and third form but *ŋi* in the second form: an ABA pattern.

[13] The person representation is different from Harbour's, which is discussed in section 6; see also footnote 15.

[14] Here, I put aside the role of the 1.INCL.MIN, which is a superset of the 1.EXCL.MIN.

1EXCL.MIN	[speaker, +minimal]
1EXCL.AUGM	[speaker, -minimal]
1EXCL.UAUGM	[speaker, +minimal, -minimal]
1INCL.MIN	[speaker, hearer, +minimal]
1INCL.AUGM	[speaker, hearer, -minimal]
1INCL.UAUGM	[speaker, hearer, +minimal, -minimal]
2MIN	[hearer, +minimal]
2AUGM	[hearer, -minimal]
2UAUGM	[hearer, +minimal, -minimal]

Table 19: Representation of minimal-augmented-unit-augmented number systems.

notational	*form*	*features*
1EXCL.MIN	ŋaya	[speaker, +minimal]
1INCL.AUGM	ŋaḷa	[speaker, hearer, -minimal]
1INCL.UAUGM	ŋar	[speaker, hearer, +minimal, -minimal]

Table 20: Mangarayi first person pronouns that take *Na* as their base.

notational	*form*	*features*
1EXCL.AUGM	ŋiḷa	[speaker, -minimal]
1EXCL.UAUGM	ŋir	[speaker, +minimal, -minimal]
1INCL.MIN	ŋi	[speaker, hearer, +minimal]

Table 21: Mangarayi first person pronouns that take *Ni* as their base.

However, the problem of the Mangarayi pronoun paradigm runs deeper than the person containment structure proposed here; the real issue is that neither the forms that take *ŋa* nor the forms that take *ŋi* as their base form a natural class.[15] Informally, we can already see this in table 18: the puzzle is that the *ŋa/ŋi* distinction tracks neither the vertical axis (person: clusivity) nor the horizontal axes (number: minimal, augmented, unit-augmented). Consider tables 20 and 21, which list first person pronouns that take *ŋa* and *ŋi* as their base, respectively. Crucially, neither the pronouns that take *ŋa* as their base, nor the pronouns that take *ŋi* as their base have a feature in common, other than [speaker], which however is part of both groups. Consequently, it is not possible at this stage to determine the relevant feature(s) responsible for the irregularity in this pronominal paradigm. Therefore, I note Mangarayi as a potential problem, however, pending further investigation, I tentatively suggest that this data point does not provide sufficient evidence of the existence of ABA patterns in clusivity.

5 Markedness

The term markedness (Trubetzkoy 1939, Jakobson 1941) has acquired a loaded meaning (see Haspelmath 2006, Rice 2007, Hume 2011, among many others). In the preceding section, I have appealed to markedness twice: (i) the exclusive is less marked than the inclusive, and (ii) singular is

[15] Note that Harbour's person features (see table 29) run into the same problems as identified here: his crucial addition of [±participant] does not offer a solution, since the *ŋa/ŋi* distinction does not track this feature either.

SG	PL	DU			
iñché	**iñchi**ñ	**iñchi**u	1st person	AAA	Mapuche
iau	**gi**m	**gi**ur	1st person	ABB	Sursurunga
nrü	**wiri**	**kou**	2nd person	ABC	Tiri

Table 22: Attested number patterns in free pronouns.

less marked than (either exclusive or inclusive) plural. With regard to the first type, markedness is an epiphenomenon of containment, which reflects the complexity of structures. As to the second type, this is based on Bale et al. (2011), who conclude that the singular is morphologically unmarked with respect to the plural on the basis of three diagnostics: overt coding, inflectional differentiation and contextual neutralisation (terminology from Haspelmath 2006).

Markedness as a governor of suppletion has been invoked recently in Smith et al. (2016), where we investigate case-driven and number-driven suppletion patterns in nominals.[16] Focusing on number-driven suppletion, we tested the containment hypothesis in systems that make a three-way number distinction; based on markedness statements such as Universal 34 (see (19)), we formulated the markedness hierarchy in (20).

(19) Universal 34 (Greenberg 1963, Corbett 2000): No language has a dual unless it has a plural.

(20) SG < PL < DU

Parallel to the triples in adjectives (ADJ-CMPR-SPRL) and clusivity (1SG-1EXCL-1INCL), we then have the triple SG-PL-DU for number. The attested patterns in pronouns are reported in table 22, where we see that pronouns can lack suppletion (AAA), as in Mapuche (Smeets 2008), or that there is one base in the singular and a second base that is shared in the plural and the dual (ABB), as in Sursurunga (Harbour 2014), or that all three bases are distinct (ABC), as in Tiri (Smith 2011).

However, we found apparent ABA patterns in the lexical nouns in table 23, where we see that the singular and dual share a form, but that the plural shows a suppletive variant.

Curiously, number seems to be the only category in which apparent ABA suppletion patterns are observed: adjectives, (pronominal) clusivity and

[16] The Smith et al. 2016 study focuses primarily on pronouns, since they are well-described cross-linguistically, and the asymmetry that lexical nouns show no case-driven suppletion (Moskal 2015a,b).

SG	PL	DU		
wùuti	mo**moya**m	**wùuti**t	‘woman’	Hopi (Smeets 2008)
vo’vou	**tula**v	**vo’vou**l	‘boy’	Lavukaleve (Terrill 2003)
panmal	**pay**um	**panmal**crm	‘man’	Yimas (Foley 1991)

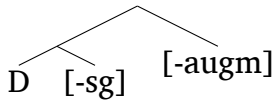
Table 23: Attested number patterns in nouns.

SG	[+singular]
DU	[-singular, -augmented]
PL	[-singular, +augmented]

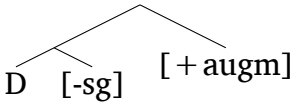
Table 24: Representation of singular-plural-dual number systems.

(pronominal) case all support the hypothesis that ABA patterns are unattested. Recall that ABA was excluded due to containment: the superlative always contains the comparative and the inclusive always contains the exclusive.[17] Turning to the representation of number, consider the number features, based on Harbour (2014) in table 24.[18] Crucially, in Smith et al. (2016), we note that although they both contain the feature [±singular], there is no containment relation between the dual (represented in (21)) and the plural (in (22)).

(21)



(22)



As such, ABA patterns are not excluded based on containment relations. Consider the VI-rules in (23) for the suppletive form in Lavukaleve (Terrill 2003); the context of the suppletive rule is [+augmented], which does not target the singular or dual, as can be seen in table 24.

[17] In Smith et al. (2016) we show that the same holds for case, where oblique cases (e.g., DAT) always contain dependent cases (ACC, ERG), which in turn always contain unmarked cases (NOM, ABS).

[18] Harbour (2011) assumes [±atomic] and [±minimal], but for present purposes, it will suffice to use [±singular] and [±augmented], respectively. Note that, effectively, in the context of [+singular], the augmented value is irrelevant, since [+singular, -augmented] is impossible and [+singular, +augmented] is the equivalent of [+singular] (Harbour 2011:206); as such, in table 24, the singular simply lacks a value for [±augmented].

a.	áine **ŋára**	b.	áine **ŋára-di**	c.	áine **ŋara-dí-a-ru**
	woman that-SG		woman that-PL		woman that-PL-LINKER-DL
	‘that woman’		‘those women’		‘those two women’

Table 25: Manam number marking.

(23) a. $\sqrt{\text{BOY}} \Leftrightarrow$ tula / _] +augm]
b. $\sqrt{\text{BOY}} \Leftrightarrow$ vo’vou

However, as we note in Smith et al. (2016), this then leads to a situation where we expect all patterns to be attested. Nonetheless, as can be seen in tables 22 and 23, we found no instances of dual-only suppletion (AAB), nor plural-only suppletion (ABA) in pronouns. In order to make the overgeneration problem smaller, we argue that in the context of [-singular], there is cross-linguistic variation as to which value of [±augmented] is marked: either [+augmented] or [-augmented] can be marked. Then, following the idea that either marked features, or both unmarked and marked features can govern suppletion (see section 4), this leads to the predictions in (24).

(24) a. If [+augmented] is the marked value, then it alone can cause suppletion; the markedness hierarchy is then: SG < DU < PL;
b. If [-augmented] is the marked value, then it alone can cause suppletion; the markedness hierarchy is then: SG < PL < DU.

The apparent ABA patterns in table 23 reflect a markedness hierarchy as in (24a), and, as such they constitute an AAB pattern. Given that which value of [±augmented] varies cross-linguistically, it is essential to have an independent determiner of markedness. In effect, Smith et al. (2016) argue that markedness correlates with overt coding (see also Croft (2003)); specifically, languages vary in whether the dual is built on top of the plural (as in Manam (Lichtenberk 1983), see table 25), or whether the plural is built on top of the dual (as in Panytyima (Smith 2011), see table 26). That is, if [+augm] is the marked value, then (i) [+augm] is overtly coded and (ii) it can serve as a context for suppletion; in addition, [-augm] is unmarked, (i) it is phonologically null and (ii) it cannot serve as a context for suppletion.

6 Discussion

In the preceding section, we saw that there are markedness reversals between dual and plural as to which category can supplete alone across lan-

	SG	PL	DL
1EXCL	ŋatha	ŋaliyakuru	ŋaliya
1INCL	ŋatha	ŋalikuru	ŋali
2	njinta	nhupalukuru	nhupalu

Table 26: Panytyima first and second person pronouns.

guages. However, markedness reversals of this sort were not attested in the clusivity data, and I propose here that the reason why markedness reversals are not seen with clusivity is that we are dealing with slightly different types of features. Specifically, [±augmented], the feature responsible for the possibility of markedness reversals, is a binary features, and, as such, either value can be selected as 'marked' in a language.[19] In contrast, the clusivity data support an analysis of, at least some, person features to be privative. That is, [hearer] is not [-hearer] or [+hearer], but rather the relation is one of presence vs. absence of the monovalent feature [hearer]. Markedness cannot vary along the same lines as number then, since it would require the literal absence of a feature to be a marked unit.

This proposal, however, has a number of consequences. Firstly, the proposal in Smith et al. (2016) to equate markedness with overt coding needs to be addressed. We have seen that both the inclusive (see table 1) and the exclusive (see table 2) can be overtly coded, despite the absence of a markedness reversal. This then, leads me to conclude that overt coding does not always reflect markedness. However, to retain the insights from Smith et al. (2016), I tentatively suggest that overt coding tracks markedness if complexity or containment are uninformative; that is, overt coding tracks markedness *within a single feature*. That is, in a binary feature [±singular] it can track either feature value as (un)marked, [+singular] or [-singular]. By way of contrast, in a privative feature [hearer], there is no markedness contrast since there is only one 'value', and, as such, overt coding does not represent markedness. In effect, this means that [+F] or [-F] can be (un)marked, but this does not apply to [F] itself.

If this is on the right track, then markedness reversals would be indicative of binary features, whilst their absence would indicate privative features. This would allow an additional evaluation tool to disambiguate be-

[19] Nevins (2011) argues [-augmented] is the marked value in general, but as we have seen, this is subject to variation.

	SG	PL	DU
1	aŋga		
1EXCL		anige	ančige
1INCL		ani	ančі
2	khɛnɛʔ	khɛni	khɛnči

Table 27: Limbu first and second person pronouns.

	SG		PL	DU
	ANIMATE	UNMARKED		
3	khunɛʔ	khɛŋ	khɛŋhaʔ	khunči

Table 28: Limbu third person pronouns.

tween theories assumes binary person features, such as [±author] and those assuming privative [speaker].[20]

Secondly, this begs the question how to analyse languages which build the exclusive on top of the inclusive (see also Harbour 2016).[21] Consider the Limbu pronominal paradigm of first and second person in table 27 and third person in table 28. Crucially, in the exclusive we see an overt morpheme *-ge* which does not feature in the rest of the paradigm. The problem here is that since the features of the exclusive ([speaker, -sg]) are a subset of those of the inclusive ([speaker, hearer,-sg]), we expect that whilst it is possible that the inclusive has an additional morpheme the exclusive can contain no morphemes that are not also present in the inclusive (see also Harbour 2016).

Before turning to an analysis in line with the assumptions here, let us first see how this is not a problem in a system which assumes a binary feature for the clusivity contrast. In his discussion on overt coding of the exclusive, Harbour (2016) shows that assuming that a binary feature distinguishes between the exclusive and inclusive circumvents this problem. Specifically, in a singular-dual-plural system with a clusivity distinction, he assumes the features in table 29 to be active; for present purposes, [+author] can be

[20] It should be noted that whilst I have used privative person features for exposition, in this paper I argue that at a minimum the feature involved in clusivity must be privative, without committing to other person features being privative (as e.g. McGinnis 2005), or being binary (as e.g. Nevins 2007).

[21] In languages that have a unique inclusive morpheme, this morpheme would be the realisation of [hearer] in the context of [speaker]: e.g., for Itzaj Maya in table 1, we would have a VI-rule such as [hearer] ⇔ -'ex /__] speaker].

1SG	[+author, -participant, +atomic]
1EXCL.DU	[+author, -participant, -atomic, -augmented]
1EXCL.PL	[+author, -participant, -atomic, +augmented]
1INCL.DU	[+author, +participant, -atomic, -augmented]
1INCL.PL	[+author, +participant, -atomic, +augmented]
2SG	[-author, +participant, +atomic]
2DU	[-author, +participant, -atomic, -augmented]
2PL	[-author, +participant, -atomic, +augmented]
3SG	[-author, -participant, +atomic]
3DU	[-author, -participant, -atomic, -augmented]
3PL	[-author, -participant, -atomic, + augmented]

Table 29: Representation of person and number (Harbour).

equated with [speaker] and [±atomic] with [±singular], [±participant] refers to the presence or absence of discourse participants.[22]

Following Harbour (2016), the feature distinguishing between the exclusive and inclusive is [±participant], and as such the exclusive morpheme in Limbu simply is the realisation of [-participant]. In addition, Harbour (2016) analyses *aŋ* to be the realisation of [+author], *-chi* dual and *-i* plural; this then, leads naturally to the attested exclusive and inclusive forms in the dual and plural. As Harbour (2016) notes, however, the analysis raises two questions. Firstly, *-ge* does not seem to be present in the first person singular, although Harbour (2016) notes that the suffix *-ga* is similar in shape and could be an exponent of [-participant] after (idiosyncratic) phonological changes. Secondly, *-ge* also does not surface in any of the third person forms; Harbour (2016) notes two explanations: (i) third person is contextually unspecified for [±participant], or (ii) *-ge* is the realisation of [-participant], but only in the context of [+author]. Data in table 30 from Gumbáiŋgar (Smythe 1948–49) shows a similar analysis: *-gei* is the realisation of [-participant], but again it needs to be contextually specified to occur only in the inclusive and not in 1SG or third person (see Harbour 2016:108 for details).

[22] As opposed to Halle 1997, Noyer 1992, Nevins 2007, i.a., the feature combination [+author, -participant] is a possible configuration for Harbour (2016), since the application of the two features is ordered. First, [-participant] applies, which removes all participants from the lattice (the set of all potential referents), but leaves potential others (third person); then, in a second step [+author] adds in the speaker; this, as such, generates a set of speaker (and potential others).

	SG	PL	DU
1	ŋaia		
1EXCL		ŋīagei	ŋaligei
1INCL		ŋallī	ŋīā
2	ŋīnda	ŋudjawinj	bulā
3	gulanna	bīn	bulári

Table 30: GumbáiNgar pronouns.

Whilst Harbour (2016) can naturally account for exclusive marking, the containment relations argued for in this paper no longer hold. That is, in table 29, there is no longer a subset-superset relation between the exclusive and inclusive. As such, the absence of ABA suppletion identified in section 2 becomes a coincidence: since Harbour (2016) formulates specific VI-rules referring to the exclusive ([-participant]), suppletion for only the exclusive becomes a possibility.[23]

If we want to retain the impossibility of ABA patterns on the grounds proposed here, we need to see whether there is a plausible alternative analysis for languages which mark the exclusive overtly, such as Limbu (see tables 27-28). If we assume that *aŋ* is the realisation of the pronominal base in the context of first person, rather than first person itself, and that the default realisation of this pronominal base is the one that surfaces in second and third person, *khɛn*[24], we see that *-ge* can be analysed differently.[25] Specifically, it could be the realisation of [speaker], which then would lead to similar questions as we saw in an analysis of *-ge* as [-participant]. Firstly, why does it not seem to surface in the first person singular, and secondly, why does it not surfaces in the inclusive? Note the similarity to Harbour's analysis: in both cases, the prediction is that the same exclusive morpheme is present on both the singular as well as the exclusive plural, and in both cases the solutions would be similar in that this marker would only surface in the context of the non-singular. The difference lies in that Harbour (2016) predicts that this morpheme also surfaces in third person, whilst the prediction

[23] One could of course use the same strategy that Smith et al. (2016) employ for number, and make [+participant] marked relative to [-participant]. Again, assuming that suppletion cannot target unmarked features alone, this would rule out suppletion in only the exclusive. However, as noted above, this leads us to predict reversals in markedness, and we would then expect to find instances, albeit isolated, where the inclusive suppletes alone.

[24] With some relevant readjustments to *khun* in 3.ANIMATE and 3.DU.

[25] Note that a pronominal base in fact would be part of any analysis where first person features are privative, since only under a binary approach to first person do second and third person have a feature in common to the exclusion of first person, [-author].

here is that this morpheme also surfaces in the inclusive. Recall that Harbour (2016) proposed two explanations for the lack of the marker in third person: (i) third person is contextually unspecified for [±participant], or (ii) the marker is only realised in the context of first person. In the analysis here, which relies on a privative clusivity feature, the overt realisation of [speaker] has to be prevented, which can be done by assuming a VI-rule in which [speaker] is realised as a null morpheme in the context of [hearer]. Leaving aside the singular form for expository reasons, the relevant subset of Harbour's rules for Limbu pronouns are given in (25a), and in (25b) the subset of relevant rules required on a privative clusivity feature analysis are given.

(25) a. [-participant] ⇔ -ge / _ [+author]
[-participant] ⇔ ∅
b. [speaker] ⇔ ∅ / _ [hearer]
[speaker] ⇔ -ge

When we compare the two approaches, we seem to be at a bit of an impasse. Both approaches face some problems with overt coding: in Harbour's analysis, the exclusive marker is suspiciously absent in 1SG and third person, whilst in the current analysis, the exclusive marker is suspiciously absent in 1SG and 1INCL. In Harbour's analysis, this is remedied by having a context-sensitive realisation in the context of first person, whilst in the current analysis, this is remedied by have a context-sensitive null realisation in the context of [hearer] (effectively, the inclusive). Upon only taking overt coding into consideration, Harbour's account seems superior, but its drawback is that it cannot readily account for the absence of ABA patterns in 1SG-1EXCL-1INCL triples identified in section 2.

What is required at this stage is an in-depth study of languages in which the exclusive is marked overtly. Assuming a privative clusivity feature, the task would be to see whether in these languages the exclusive marker can be analysed as a realisation of [speaker]. Assuming a binary clusivity feature *à la* Harbour (2016), it would be well worth combining the insights of Smith et al. (2016) discussed in section 5; specifically, if markedness indeed correlates with overt coding, then in languages in which the exclusive (i.e., [-participant]) is marked, then we predict that the exclusive should be able to supplete alone, whereas the inclusive should not.

7 Conclusion

In this paper, I have shown that in a survey of 235 languages that show a clusivity distinction, in 1SG-1EXCL-1INCL there are no convincing ABA suppletion patterns, where the exclusive suppletes to the exclusion of the inclusive. This I argued to be a consequence of containment hypothesis applied to clusivity: the inclusive always properly contains the exclusive. Furthermore, based on the robustness of this pattern, this supports a privative feature representation of the feature involved in clusivity, which, as such, allows for only one value of clusivity to be the most marked: the inclusive. However, it should be stressed here that the current paper exclusively investigated free pronominal forms, and did not take into account affixal markers of clusivity.

This was contrasted to number-driven suppletion in Smith et al. (2016), where we observed that there is variation as to which value of [±augmented], plural ([+augm]) or dual ([-augm]), is the most marked, thus leading to two possible markedness hierarchies: SG-PL-DU as well as SG-DU-PL. The fact that these kind of reversals were not seen in clusivity I suggested motivates a view of person features as privative, rather than binary.

Throughout this paper I have also been using varioius different conceptions of the term markedness. It has been taken to be an expression of proper containment, as in adjectival suppletion and the relation between the exclusive and the inclusive. In addition, it has expressed featural containment based on semantic coherence, as in the case of [±singular] being contained within [±augmented].

I have also noted two other markedness relations: that between [+singular] and [-singular] and that between [+augmented] and [-augmented]. Both of these have been associated with more debatable correlates of markedness: overt coding, and in the case of singular vs. non-singular also inflectional differentiation and contextual neutralisation. Crucially, these two final markedness relations refer to binary values of the same feature. I have suggested here that this can be tracked by overt coding.

Appendix

Below I list languages which display the various suppletive patterns for clusivity that I have identified. The data is taken from Norval Smith's database of pronominal forms (http://languagelink.let.uu.nl/fpps/). When running a query for languages that show a clusivity distinction, the database returns

262 languages. The number is different here for the following reasons. (i) Some languages are incorrectly classified as having a clusivity distinction. (ii) Some languages I left aside due to insufficient information. (iii) Some languages showed more than a single variant for a single pronoun, and as such they fall in two separate suppletive patterns (e.g. Hadza).

As noted in the text, I am only reporting here on 1SG-1EXCL-1INCL triples, and did not take into account any additional number distinctions. Since absolute numbers are not relevant, as opposed to the distinction between attested and unattested, I have made a number of educated guesses about patterns without making a careful study of each language. The crucial observation here is that ABA patterns are virtually unattested, bar perhaps the case of Mangaryi (see section 4.1).

AAA (59)

Alta (Northern), Ayiwo, Balti, Camling, Chiapanec, Daur, Flinders Island, Gurinji, Hadza, Ibaloi, Iwaidja, Jarnango, Jaru, Kalahan (Kayapa), Kambera, Kannada, Karadjeri, Kayardild, Kilivila, Kuku-Yalaŋji, Kulere, Kuman, Limbu, Mairasi, Mangala, Mazatec (Chiquihuitlán), Mongolian (Halh), Nachering, Ngemba, Ngile, Nias, Nyamal, Nyigina, Nywaygi, Otomi (Ixtenco), Pakaásnovos, Paluan, Pangasinan, Panytyima, Pom, Popoloca (San Marcos Tlalcoyalco), Purik, Quechua (Ayacuncho), Quechua (Northern Junín), Sambal (Botolan), Sentani, Soo, Tidore, Tobelo, Tsou, Tukang Besi (North), Tzeltal (Bachajón), Umpila, Urarina, Wajarri, Walmatjarri, Warembori, Wikngenchera, Yawa.

ABB (34)

Abua, Andi, Bardi, Bribi, Buol, Daju (Dar Sila), Dehu, Gayo, Hadza, Hdi, Heiban, Ifugao (Batad), Ilocano, Isnag, Kalagan, Karas, Kerra, Koiali (Mountain), Kwamera, Lavukaleve, Makasar, Midob, Mina, Moraid, Nyulnyul, Odual, Rotuman, Sentani, Tangga, Tzeltal (Bachajón), Ura, Uradhi, Warrwa, Yawuru.

ABC (87)

Aceh, Ainu, Balangao, Batak Karo, Bats, Biak, Bora, Borôro, Chadong, Cocama-Cocamilla, Daasanach, Djeebbana, Dongxiang, Efate (South), Fijian, Guaraní (Eastern Bolivian), Gujarati, Hanunoo, Hatam, Hawaiian, Iquito, Javanese,

Katcha-Kadugli-Miri, Kerra, Kodi, Kunimaipa, Kwini, Lampung, Leti, Limbum, Logorik, Mae, Mafea, Makaa, Makian (East), Manobo (Agusan), Maori, Mapia, Maranao, Marathi, Marghi (Central), Miwok (Central Sierra), Miwok (Northern Sierra), Miwok (Southern Sierra), Moken (Dung), Moken (Surin), Moklen (Central), Moklen (Northern), Mori Bawah, Naga (Ao), Nambas (Big), Ngaju, Ngandi, Ohlone (Southern), Old Nubian, Ouma, Pileni, Rapa Nui, Ratahan, Rendille, Saliba, Sama (Southern), Samoan, Santali, Savosavo, Semelai, Shatt , Shilluk, Sirionó, Somali, Svan , Tabla, Tagalog, Tboli, Telugu, Tetun, Tiri, Toda, Toroko, Trió, Tulu, Tuvaluan, Uradhi (Mbiyawom), Wayana, Wunambal, Yagua, Yawa.

AAB (54)

Aymara (Central), Beliat, Bookan, Bunaba, Carib, Cham (Eastern), Chinese (Hakka), Chinese (Mandarin), Chinese (Min Nan), Comanche, Dumi, Fulfulde (Adamawa), Fulfulde (Maasina), Gagadu, Gilyak (Amur), Gilyak (North-Sakhalin), Gooniyandi, Huave (San Mateo del Mar), Jehai, Kamwe, Karbi, Kimaragang, Koalib, Kolami (Northwestern), Kolami (Southeastern, Naiki), Krahô, Kumarbhag Paharia, Kurux, Loma, Malagasy (Plateau), Malayalam, Malecite-Passamaquoddy, Manchu, Marghi (Central), Margu, Maskelynes, Menominee, Movima, Musey, Nias, Nimboran, Potawatomi, Sanumá, Sauria Paharia, Semelai, Sui, Tamil , Terei, Teribe, Toroko, Tulu, Udihe, Uto-Southern Paiute (Chemehuevi), Zapotec (Lachiguiri).

ABA (1?)

Mangarayi?

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