The feature structure of pronouns and the ABA-diagnostic

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1 Introduction

- ▷ methodology: look at syncretism patterns to learn about underlying feature structure of the personal pronouns.
- ▷ primary data: Cysouw (2003).

Main claims:

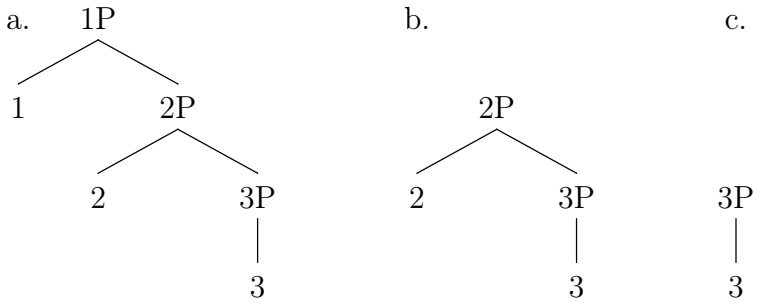
- ▷ certain types of syncretisms require an analysis in terms of pointers.
- ▷ pointers open the door to ABA-patterns.
- ▷ the ABA diagnostic has reduced applicability.

2 The person feature complex

A first shot at a nanosyntactic view on Person (Starke 2013):

- ▷ 3 privative features: [speaker], [participant], [person]
- ▷ for expository purposes, I refer to these features by numbers:
  - ○ 1 = speaker
  - ○ 2 = participant
  - ○ 3 = person
- ▷ the features entertain a containment relation
- ▷ the feature trees for the personal pronouns 'I', 'You', and 'he' are given in (1a), (1b), and (1c), respectively:

(1)



▷ What syncretisms does this system predict?

(2)

					*
1	A	A	A	A	A
2	B	A	B	A	B
3	C	B	B	A	A

▷ possible syncretisms between 1 and 2 (AAB), 2 and 3 (ABB), and 1, 2, and 3 (AAA)
▷ no syncretism of 1 and 3 across 2 (*ABA)

What do we find?

▷ syncretisms in the singular pronouns are extremely rare: Cysouw (2003) finds only two languages (out of some 450 languages listed in the index) showing ABB (Qawesqar and Winnebago) (not the topic of this talk)
▷ syncretisms arise in the verbal inflection (not the topic of this talk)
▷ syncretisms arise in the reflexive forms, and between reflexive and personal pronouns (not the topic of this talk)
▷ the topic of this talk: syncretisms with/in the plural of the personal pronouns

3 Syncretisms in the Plural

3.1 Types of patterns

▷ vertical (cross-person) ((3)-I)
▷ horizontal (cross-number) ((3)-II)
▷ nonlinear (i.e. cross-person and cross-number) ((3)-III)

(3)

	I		II		III	
	sg	pl	sg	pl	sg	pl
1	C	A	A	A	A	A
2	D	B	B	C	B	A
3	E	B	D	E	C	D

3.2 Where is number?

▷ some languages form the plural of pronouns with the same morpheme that is used with nouns (or certain noun classes) (e.g. Mandarin Chinese, Corbett 2000:76).

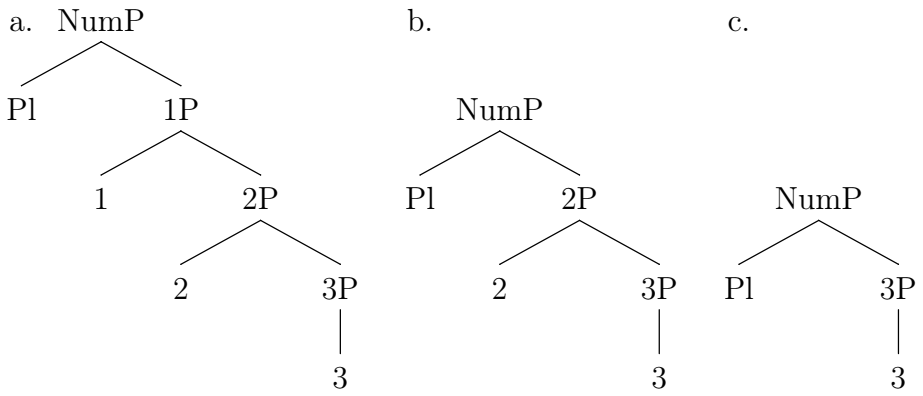
(4) Mandarin

	sg	pl
1P	wǒ	wǒ-men
2P	nǐ	nǐ-men
3P	tā	tā-men

(5) xuésheng xuésheng-men
student student-PL

▷ exploiting this analogy, we conclude that plural number sits on top of the person feature complex, as shown in (6):

(6)



(7) </men/, NumP >

▷ spell-out driven movement: to derive the plural pronouns in (4), the

complement of Pl moves into the Spec of NumP, after which *-men* spells out NumP.

- ▷ in pronoun systems without a plural morpheme, there is a different lexical item for each of (6).

3.3 Horizontal syncretisms

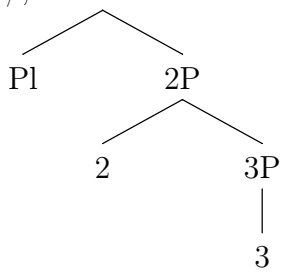
- ▷ the facts
  - ◦ 3P: Sinhalese, Sentani, Asmat, SALISH
  - ◦ specific type: no 3P pronouns, but demonstratives
  - ◦ 2P (rare): English, Xokleng
  - ◦ 1P (rare): Marind
  - ◦ 2P and 3P: Berik, Kuman
  - ◦ 1P and 3P (rare): Tairora
  - ◦ all persons: Salt-Yui (3P: demonstratives)

(8) Berik (New Guinea)

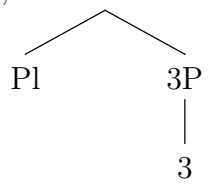
	sg	pl
1P	ai	ne
2P	aame	aame
3P	je	je

- ▷ lexical items are given in (9).
- ▷ these assume that plural pronouns are characterised by the presence of an additional [Pl] feature.

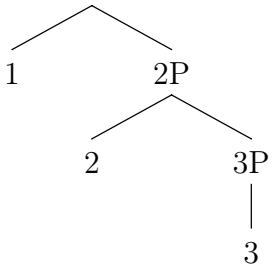
(9) a. </aame/, NumP >



b. </je/, NumP >



- ▷ (9a) can spell out 2P, singular and plural, by the *Superset Principle*: the tree of the singular pronoun is a subtree of the plural pronoun tree.
- ▷ for the same reason, (9b) can spell out 3P, singular and plural.
- ▷ Problem: for 2P singular *aame*, there is a tie between (9a) and the 1P sg pronoun *ai*:

(10) </ai/, 

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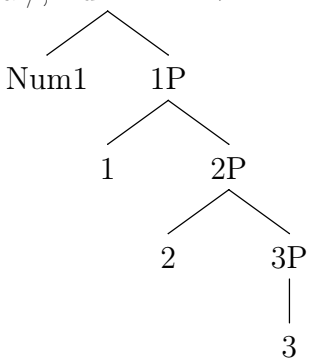
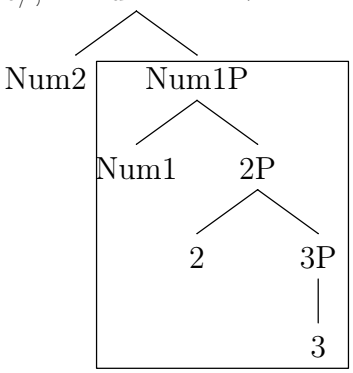
- ▷ (9a) *aame* and (10) *ai* each contain exactly 1 feature more than the syntactic node of a 2P sg pronoun
- ▷ how can we ensure that (9a) *aame* wins the competition in the 2P?
- ▷ answer: the number projection is internally complex
- ▷ singular number also involves the presence of a number feature (Num1), plural number involves two features (Num2 and Num1)

(11) a. </ai/, Num1P 

> b. </aame/, Num2P 

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- ▷ (11b) *aame* can still spell out 2P, singular and plural (by shrinking at the top)
- ▷ (11a) *ai* can no longer spell out the 2P sg, since it does not contain the syntactic tree as a subtree (highlighted in (11b))
- ▷ this crucially requires that singular pronouns contain a Num1 feature: the presence of Num1 in (11a) prevents the tree from shrinking from 1P to 2P: for this to happen, the tree would have to shrink in the middle
- ▷ the other attested patterns of horizontal syncretism work in the same way
- ▷ the absence of languages with a horizontal syncretism in 1P and 2P and not 3P has no principled explanation

In sum:

- ▷ the horizontal syncretisms support the claim that singular number is not the absence of number, but the presence of a singular number feature
- ▷ the existence of horizontal syncretisms further rests on
  - ○ the possibility to build trees with an incomplete person f_{seq}, i.e. with person features missing at the top of the person sequence
  - ○ the shrinking of the number projection at the top of the tree

3.4 Vertical syncretisms

3.4.1 The facts

- ▷ as stated earlier, these only occur in the plural.
- ▷ attested patterns:
  - ○ AAB: many Athabascan languages (e.g. Slave, Chiricahua Apache, Navaho, Kato, Hupa), Awa, Southern Haitian Creole
  - ○ ABB: Nez Perce, Warekena, Wolof (object pronouns), Mauritian Creole[1]
  - ○ AAA: possibly only attested in the inflectional endings (e.g. Dutch *-en*) (Cysouw (2003) only gives examples of inflection)
  - ○ ABA ('not a common pattern' Cysouw 2003:134): Bagirmi
- ▷ the account of the AAB and ABB syncretisms is not straightforward
- ▷ consider the AAB pattern in Slave (an Athabascan language, Cysouw 2003:124):

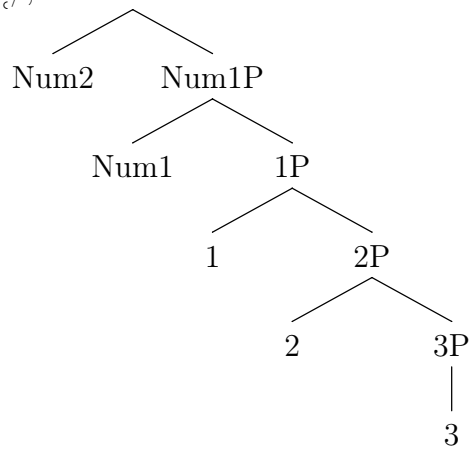
(12)

	sg	pl
1P	si̯	naxi̯
2P	ni̯	naxi̯
3P	ʔedi̯	ʔegedi̯

- ▷ the lexical tree for the 1P plural pronoun looks like (13):

[1] According to Baker (1972) and Stein (1984), but not Adone (1994), who gives an ABC pattern in the plural.

(13) </naxi̯/, Num2P >



- ▷ this can spell out a 1P pl pronoun, but not 2P pl one, since a 2P pl pronoun is not a subtree of (13) (it lacks the 1P node)
- ▷ to derive AAB, the tree would have to shrink in the middle (from 1P to 2P)
- ▷ for the same reason, the ABB pattern cannot be derived (the lexical item for 2P cannot shrink to 3P)
- ▷ this is the problem of multidimensional paradigms, which may feature both 'horizontal' and 'vertical' syncretism
- ▷ consider the German definite article:

(14)

	masc	neut
NOM	der	das
ACC	den	das
GEN	des	des

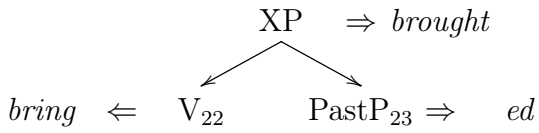
- ▷ Caha & Pantcheva (2012) propose a solution for this problem in terms of pointers (Starke 2011)

3.4.2 Pointers

- ▷ a pointer is a node in the tree of a lexical item that points to another, existing, lexical item

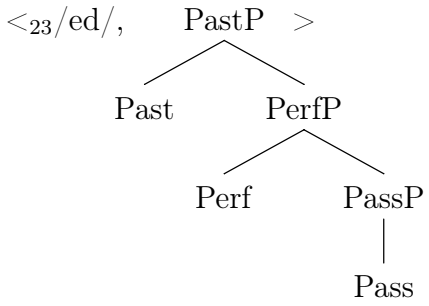
(15) a. $<_{24}$ /brought/, [$_{XP}$ 22 23]>
b. $<_{22}$ /bring/, V>
c. $<_{23}$ /ed/, PastP>

(16)



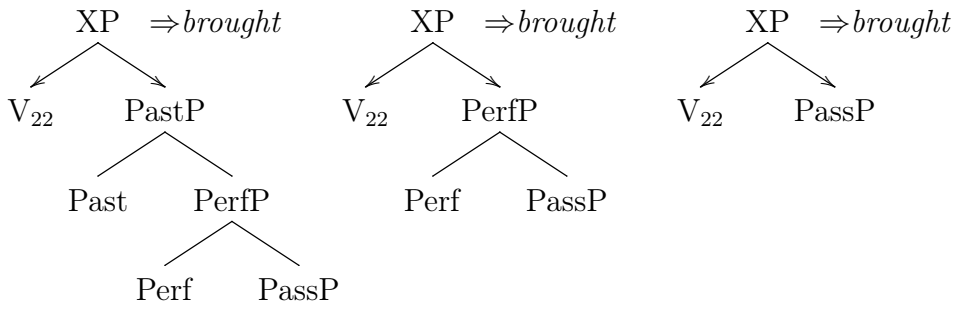
- ▷ each of the lexical items pointed to is subject to independent cyclic spellout
- ▷ this creates *bring+ed*, which is overwritten at the top node by *brought*
- ▷ given the syncretism between Past-Perfect-Passive, we must conclude that *-ed* has more internal structure, so that instead of (15c), we have (17):

(17)



- ▷ the suppletive form *brought* shows the same Past-Perfect-Passive syncretism.
- ▷ this means that in the item with the pointer (16), the item pointed to (17) can shrink to any subtree:

(18)

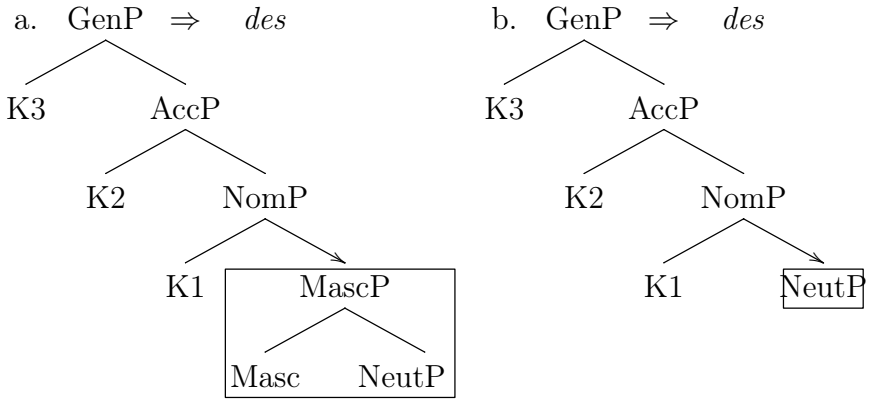


- ▷ an item with a pointer can shrink not just at the top, but also in the middle of the tree, at the top of the item pointed to.
- ▷ as a result, the lexical item *brought* can spell out three different syntactic trees.

3.4.3 Multidimensional paradigms (Caha & Pantcheva 2012)

- ▷ Case endings on nouns are typically fusional, and spell out other features besides Case: number, gender, noun class
- ▷ C&P propose that nominal paradigms can contain pointers at the junctures of the dimensions
- ▷ this allows the generation of both horizontal and vertical syncretisms
- ▷ consider the German definite article *des*, which spells out genitive masculine and neuter (see (14) above):

(19)

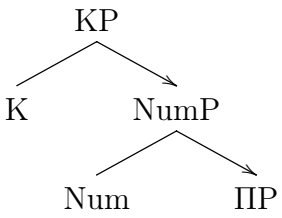


- ▷ the cross-gender syncretism in the genitive is by shrinking the tree of *des* in the middle (boxed area in (19)).
- ▷ C&P have to give up the restriction that pointers point to existing lexical items: there is no lexical item that spells out MascP (or if there is, we never see it, since it always gets overwritten by (19)).

Back to pronouns now:

- ▷ in the same manner as Case endings, pronouns spell out multiple features: Case, number, person, and gender.
- ▷ lexical items for pronouns can also contain pointers at the juncture of the dimensions:

(20)

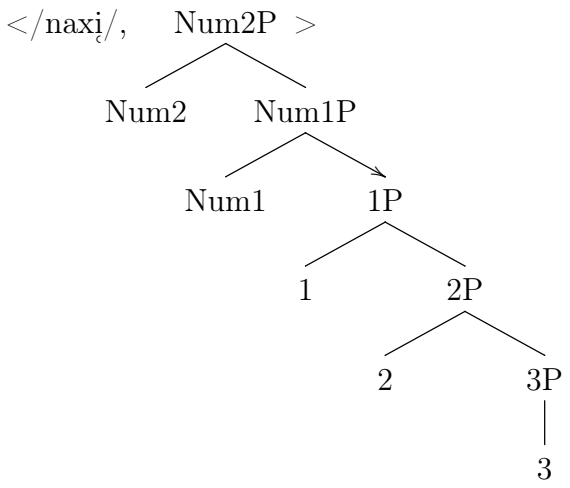


- ▷ this allows the derivation of the problematic vertical syncretisms, since

the tree can now shrink in the middle (from 1P to 2P to 3P)

- ▷ recall the lexical tree for the Slave pronoun *naxi*, syncretic for 1P pl and 2P pl ((13) above)
- ▷ we now add a pointer to this tree:

(21)



- ▷ deriving AAB
  - ◦ the lexical item in (21) can spell out a 1P pl pronoun, but also a 2P pl one, because of the presence of the pointer.
  - ◦ the lexical item for the 3P pl pronoun *ʔegedi* does not contain the 1P and 2P projection.
  - ◦ it will win the competiton from (21) in 3P pl because of the *Elsewhere Principle*.

(22) *Elsewhere Principle* (Caha & Pantcheva 2012)
In case two rules, R1 and R2, can apply in an environment E, R1 takes precedence over R2 if it applies in a proper subset of environments compared to R2

- ▷ deriving ABB:
  - ◦ assume a lexical item like (21) but without a pointer, and a B-pronoun like (21) (with a pointer) but without the 1P node
  - ◦ the A-pronoun can only spell out 1P pl, since it does not contain a pointer, and the B-pronoun does not compete, since it lacks the 1P node
  - ◦ the B-pronoun contains a pointer and can spell out both 2P pl and 3P pl

3.4.4 Deriving ABA

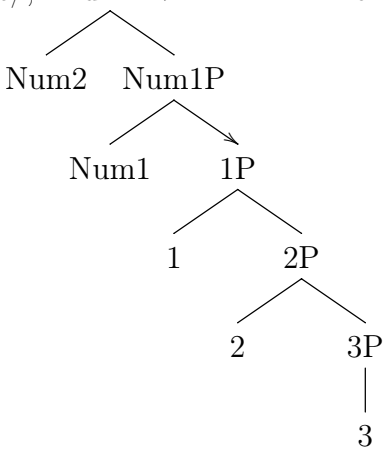
- ▷ allowing pointers also allows a certain type of ABA pattern in the plural, in agreement with an abstract prediction made by Taraldsen (2012).
- ▷ this ABA pattern is actually attested:

(23) Bagirmi

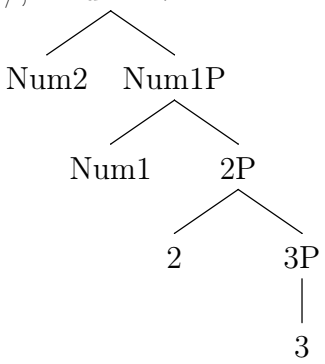
	sg	pl
1P	ma	d'e
2P	i	se
3P	ne	d'e

- ▷ for *d'e*, assume a lexical entry with a *pointer*, as in (24a).
- ▷ (24a) is flexible at the joint: due to the shrinkability of items with pointers, the lexical item *d'e* can spell out all the plural pronouns.
- ▷ the lexical item for *se*, given in (24b), does not contain a pointer, and is therefore rigid (i.e. not shrinkable in the middle).

(24) a. </d'e/, Num2P>



b. </se/, Num2P>



- ▷ if the syntactic tree is 3P plural:
  - ◦ (24a) *d'e* is the only candidate, since (24b) *se* cannot shrink in the middle to spell out 3P pl.
- ▷ if the syntactic tree is 2P plural:
  - ◦ *se* wins the competition from *d'e*, even though their trees are identical (modulo the shrinking of (24a) at the juncture), because of the *Elsewhere Principle*.
  - ◦ the lexical item (23b), without the pointer, applies in a proper

subset of the environments of the lexical item (24a), with the pointer.
    - (24a) applies to 9 structures (Num2Num1-1P2P3P, Num2Num1-2P3P, Num2Num1-3P, Num1-1P2P3P, Num1-2P3P, Num1-3P, 1P2P3P, 2P3P, 3P).
    - (24b) applies to 4 structures (Num2Num1-2P3P, Num1-2P3P, 2P3P, 3P).
- ▷ if the syntactic tree is 1P plural:
    - *se* is not a competitor since it lacks a 1P node; *d'e* can (and does) spell out the tree.
- ▷ these findings agree with an abstract prediction made by Taraldsen (2012), who argues that ABA patterns may arise in multidimensional paradigms (given Caha & Pantcheva's analysis in terms of pointers).
- ▷ I will return to the consequences for the syncretism diagnostic in section 4.

3.5 Nonlinear syncretisms

3.5.1 Shapes and sizes

- ▷ syncretisms which are not exclusively horizontal, and not exclusively vertical either
    - L-shaped, contiguous
    - diagonal (non-contiguous)
    - L-shaped, with ABA (non-contiguous)
    - double L, with ABA
    - double L, without ABA
    - diagonal with ABA

3.5.2 L-shaped, contiguous (derivable, attested)

(25) Usarufa

	sg	pl
1P	ke	ke
2P	e	ke
3P	we	ye

- ▷ *ke* is a lexical item containing a pointer; it can spell out all persons and numbers

▷ *ke* loses the competition to more specific lexical items without pointers (*e, we, ye*)

3.5.3 Diagonal (derivable, attested)

(26) Suki

	sg	pl
1P	ne	e
2P	e	de
3P	u	i

▷ diagonal syncretisms contradict spatial acccounts of syncretism (e.g. McCreight & Chvany 1991)
▷ the lexical tree of the *e*-pronoun is maximal and flexible, i.e. shrinkable at the joint (from 1P to 2P)
▷ *e* can express all the persons and numbers
▷ it loses the competition to the rigid items for the other persons and numbers

3.5.4 L-shaped with ABA (derivable, unattested)

(27)

	sg	pl
1	A	A
2	C	B
3	D	A

▷ derivable in principle: the A-item is maximal and flexible; it loses out to the more specific C-B-D items
▷ unattested in the personal pronouns

3.5.5 Double L, without ABA (underivable, unattested)

(28)

	sg	pl
1	A	A
2	B	A
3	B	B

(29)

	sg	pl
1	A	A
2	A	B
3	B	B

- ▷ not derivable.
- ▷ the reason is that there are two competing items, which both contain pointers.
- ▷ the A-item is maximal and flexible; it loses out to the more specific B-item in the 3P (unproblematic), but also in the 2P, both sg and pl, because the A-item applies to more cases than the B-item.
- ▷ unattested, both in the personal pronouns and in verbal inflectional marking.
- ▷ note that these patterns have an ABB or AAB syncretism in the singular (vertically), which is independently unattested (or extremely rare) in the pronouns.

3.5.6 Double L, with ABA (underivable, unattested)

(30)

	sg	pl
1	A	A
2	B	B
3	B	A

- ▷ not derivable.
- ▷ again, the reason is that there are two competing items, which both contain pointers.
- ▷ B will win from A in 3P pl since its tree is smaller than the tree of A.
- ▷ the pattern is unattested in the personal pronouns.
- ▷ it is attested in verbal inflectional morphology, e.g. West-Flemish:

(31) West-Flemish inflectional endings

	sg	pl
1	ik werk-en	wulder werk-en
2	gie werk-t	gulder werk-t
3	ij werk-t	zulder werk-en

3.5.7 Diagonal with ABA (underivable, unattested)

(32)

	sg	pl
1	C	A
2	D	B
3	B	A

- ▷ not derivable

- ▷ B contains a pointer (to get the diagonal), and will therefore win from A in the 3P pl.
- ▷ unattested in the personal pronouns.
- ▷ attested in the verbal inflection of the German present tense:

(33)

	sg	pl
1	ich arbeit-e	wir arbeit-en
2	du arbeite-st	ihr arbeite-t
3	er arbeite-t	sie arbeit-en

4 Consequences for the syncretism diagnostic

4.1 The problem

- ▷ if ABA patterns are possible, this (potentially) spells bad news for the usability of the syncretism diagnostic to arrange paradigms, and consequently, feature trees.
- ▷ to see this, reconsider the case of the German definite article:

(34)

	masc	neut
NOM	der	das
ACC	den	das
GEN	des	des

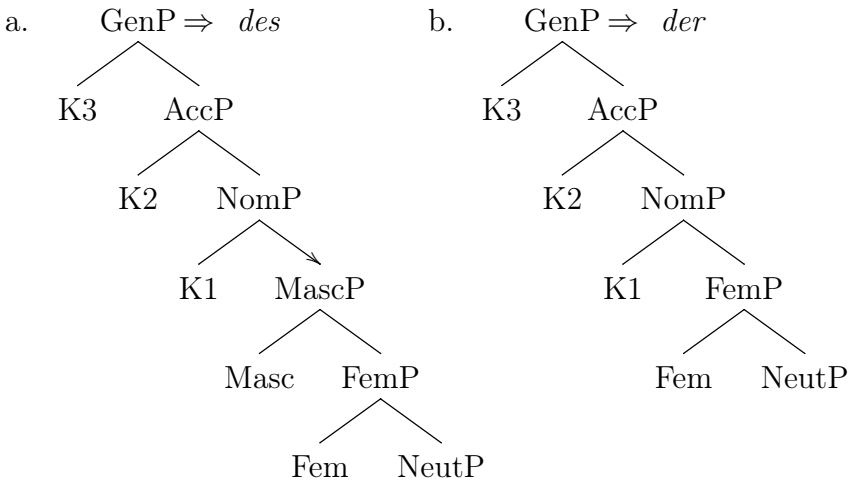
- ▷ we add feminine gender, and arrange in a (hypothetical) ABA-configuration:

(35)

	masc	fem	neut
NOM	der	die	das
ACC	den	die	das
GEN	des	der	des

- ▷ assume a matching (hypothetical) gender hierarchy masc > fem > neuter
- ▷ lexical items for the genitive forms *des* and *der* which derive this ABA pattern are given in (36):

(36)



- ▷ (36a) can spell out all genders, due to the shrinkability of the tree at the juncture.
- ▷ in the feminine gender, (36b) wins because of the *Elsewhere Principle*.
- ▷ we derive the ABA pattern.
- ▷ conclusion: the 'horizontal' syncretism in the definite article is uninformative about the hierarchical arrangement of the gender features.

4.2 When is ABA (im)possible?

4.2.1 Fusion

- ▷ the Case syncretisms are unproblematic vertically, but horizontally, pointers are needed.
- ▷ the pronoun syncretisms are unproblematic horizontally, but vertically, pointers are needed.
- ▷ where exactly is the problem? what makes the 'horizontal' syncretism different from the 'vertical' one?
- ▷ syncretisms in the structurally higher dimension are unproblematic:
  - ◦ Case sits higher than gender, therefore Case syncretisms which keep gender constant ('vertical') can be derived without further ado.
  - ◦ number sits higher than person, therefore number syncretisms which keep person constant ('horizontal') can be derived without further ado.
- ▷ syncretisms in structurally lower dimensions require pointers:
  - ◦ gender syncretisms which keep Case constant, as in (36) ('horizontal').

- person syncretisms which keep number constant ('vertical').

▷ pointers open the door to ABA syncretisms.

Conclusion:

▷ ABA patterns can arise with lexical items containing pointers.
▷ more specifically, a fusional lexical item can show an ABA syncretism in a dimension which is hierarchically lower.
▷ ABA in the highest dimension of a lexical item is still ruled out, as long as the lower dimensions in the tree are kept constant.

▷ given what we assumed earlier about number being hierarchically higher than person, and the featural difference between singular and plural, we also expect there to be (vertical) ABA-patterns in the singular.
▷ however, in view of the general paucity of syncretisms in the singular, this prediction will be hard to test.

4.2.2 Agglutination

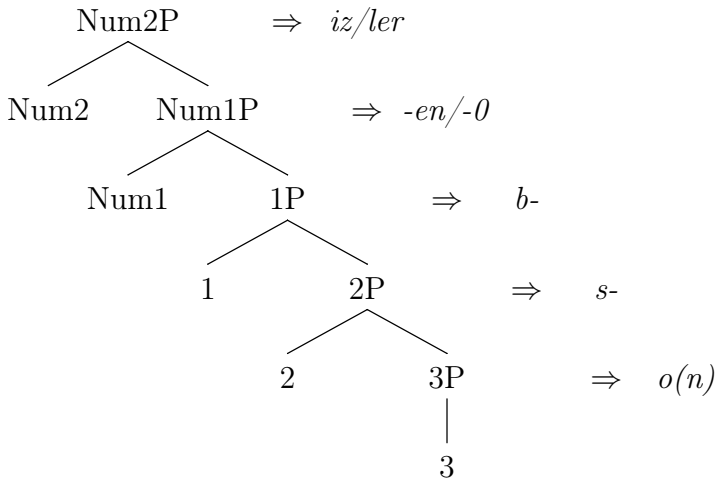
▷ consider the Turkish pronouns:

(37)

	sg	pl
1	b-en	b-iz
2	s-en	s-iz
3	o	on-ler

▷ at first sight, these forms appear to reveal both a horizontal and a vertical syncretism.
▷ however, the forms are not syncretic, but agglutinative: phonological exponents are identifiable which spell out exactly one feature dimension.

(38)



▷ *-en/-0* and *-iz/-ler* allomorphy depends on context:
- *-en* spells out Num1P in the context of 1P/2P
- *-iz* spells out Num2P in the context of 1P/2P
- *-0* spells out Num1P in the context of 3P/N
- *-ler* spells out Num2P in the context of 3P/N

▷ *-iz* is also found, with the same distribution, in the expression of possession (Plank 1991):

(39)

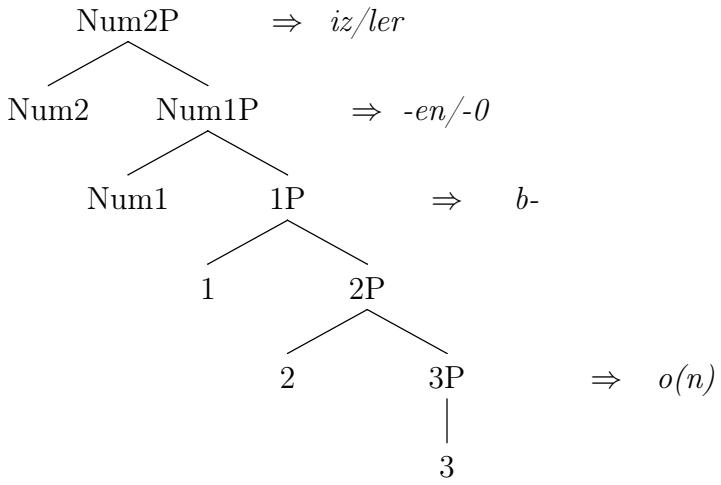
		'hand'	'hands'	
		el	el-ler	'hand(s)'
sg	1	el-im	el-ler-im	'my hand(s)'
	2	el-in	el-ler-in	'your(sg) hand(s)'
	3	el-i	el-ler-i	'his hand(s)'
pl	1	el-im-**iz**	el-ler-im-**iz**	'our hand(s)'
	2	el-in-**iz**	el-ler-in-**iz**	'your(pl) hand(s)'
	3	el-ler-i	el-ler-i	'their hand(s)'

▷ what would a true syncretism look like?

(40)

	pl	pl
1	b-iz	b-iz
2	b-iz	on-iz
3	on-ler	on-ler

(41)



- ▷ in the case of agglutination, ABA is ruled out.
- ▷ Cysouw (2003) does not look at pronouns in terms of their internal structure.
- ▷ diving deeper into his data with an eye on internal structure might reveal more agglutination (and agglutination plus syncretism) than we see now.

5 Conclusion

The main findings of this talk:

- ▷ cross-person syncretisms require an analysis in terms of pointers.
- ▷ pointers open the door to ABA-patterns, which are also empirically attested.
- ▷ the applicability of the ABA diagnostic is reduced to the following environments:
  - ○ lexical items fusing several feature dimensions are not expected to display ABA in the highest dimension.
  - ○ lexical items that are not fusional are not expected to display ABA patterns.

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