New project proposal: agreement with conjoined arguments
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1.   Introduction

TABLE 1: Zulu noun classes (https://en.wiktionary.org/wiki/Appendix:Zulu_nouns)

Singular classes				Plural classes			
Class	**Usual meaning(s)**	**Prefix**	**Example nouns**	**Class**	**Usual meaning(s)**	**Prefix**	**Example nouns**
1	person	umu-, um-	umuntu ("person"), umZulu ("Zulu person")	2	people	aba-, ab- (abe-)	abantu ("people")
1a		u-	umama ("mother"), ubaba ("father")	2a		o-	omama ("mothers"), obaba ("fathers")
3	plant, body part, river	umu-, um-	umpentshisi ("peach tree"), umunwe ("finger")	4	plants, body parts, rivers	imi-, im-	imipentshisi ("peach trees"), iminwe ("fingers")
3a		u-	udokotela ("doctor"), ushukela ("sugar")				
5	fruit, body part, ethnicity/race (member), loanwords	ili-, i-	ipentshisi ("peach"), ikhanda ("head"), iNgisi ("English person")	6	fruits, body parts, ethnicity/race (collective), loanwords	ama- (ame-)	amapentshisi ("peaches"), amakhanda ("heads"), amaNgisi ("(the) English people")
7	object, body part, kind of person, custom/culture/language	isi-, is-	isitsha ("container, bowl"), isandla ("hand"), isidakwa ("alcoholic"), isiZulu ("Zulu culture, Zulu language")	8	objects, body parts, kinds of people	izi-, iz-	izitsha ("containers, bowls"), izandla ("hands"), izidakwa ("alcoholics")
9	animal	im-, in-, i-	inja ("dog")	10	animals	izim-, izin-	izinja ("dogs")
11	long/thin object	ulu-, u-	uphondo ("horn"), uthi ("stick")		long/thin objects		izimpondo ("horns"), izinti ("sticks")
14	abstract concept	ubu-, utsh-	ubuntu ("humanity"), utshwala ("beer")				
15	infinitive	uku-, uk-	ukuhamba ("to walk")				
17	relics, locatives, unspecified class	uku-, uk-	ukwindla ("autumn")				

Research question for an Afranaph project: What happens when you conjoin nouns from the same or different noun classes? How variable are the results, across languages?

Singular+singular: [1+1], [3+3], [5+5], [7+7], [9+9], [1+3], [1+5], [1+7], [1+9]…
Plural+plural: [2+2], [4+4], [6+6], [8+8], [10+10], [2+2], [2+6], [2+8], [2+10]…
Singular+plural; plural +singular [1+2], [1+4]…[2+1], [4+1]…
[+human]+[-human], vice-versa; [dimin]+[dimin] etc.

(1)   [X+Y] worked together/saw each other/collided/separated…

Initial results of my work on Xhosa: it depends on the classes of the conjuncts.

(2)   Agreement with conjoined singulars in Xhosa
        a. [-human] nouns: class 8 *zi-*.
        b. [+human] nouns intrinsically class 7 or 9: *zi-*.
        c. Nouns intrinsically class 1 or 1a, whatever their value for [+/-human]: class 2 *ba-*.
        d. [+human] nouns not in classes 7, or 9: class 2 *ba-*

(3)   Agreement with conjoined, preverbal plural subjects: hierarchies of preference
    (i)   2>4 (order irrelevant)
    (ii)   2>6 (order irrelevant)
    (iii) First conjunct agreement >last conjunct agreement>default

Post-verbal subjects: first conjunct agreement is the only option

Proposal: a self-service questionnaire in which participants (i) compile lists of representative
    nouns for all classes and (ii) work through a set of questions with predicates like
    those in (1), and (iii) add extras like complementizer agreement, anaphora licensing…

Why this matters: the results bear on prominent theoretical issues including…

A. Competing analyses of Bantu noun class: Controversy on familiar pattern in (4), from Swahili

(4) a. m-toto/wa-toto   b. m-ti/mi-ti   c. gari/ma-gari   d. n-dovu/n-dovu
    1-child/2-child   3-tree/4-tree   5car/6-car   9-elephant/10-elephant
    'child/ren'   'tree/s'   'car/s'   'book/s'

•Paired classes are singulars/plurals of 5+ nominal genders: Carstens (1991), Corbett (1991),
    Corbett & Mtenje (1987), Watkins (1937).

(5)   Bantu Genders (Carstens 1991)

    Gender A: stems of Classes 1/2   Gender D: stems of Classes 7/8
    Gender B: stems of Classes 3/4   Gender E: stems of Classes 9/10
    Gender C: stems of Classes 5/6   Etc.

(6)   Sample Spell-Out rules yielding Swahili Noun Class Prefixes

    [Singular] $\longleftrightarrow$ /m-/   /__N[Gender A]   [Plural] $\longleftrightarrow$ /wa-/ /__N[Gender A]

    [Singular] $\longleftrightarrow$ /ki-/   /__N[Gender D]   [Plural] $\longleftrightarrow$ /vi-/ /__N[Gender D]

•Gender, hence class, is a feature of "little n" Ferrari (2005), Kihm (2005), Kramer (2015),
    Lecarme (2002); *n*s come in interpretable and uninterpretable gender varieties (Kramer
    2015), accounting for coexistence of arbitrariness and strands of semantic consistency.

(7)   Hypothetical little *n*s of classes 9/10 (= Carstens's Gender E), adapting Kramer 2015:253.

    n_{E1} *i*[animal]   [in_{E1} √DOVU] *ndovu* - 'elephant' (an animal)
    n_{E2} (default; for other members)   [n_{E2} √DIZI] *ndizi* - 'banana' (not an animal)

•Taraldsen et al (2018): no shared gender features underlie the singular/plural pairings; rather, class features are contributed by null nominal specifiers.

(8) Class prefixes are specifiers:
Taraldsen et al (2018)   #P NP_Y (overt) ← no gender feature

$\#_{\{Sing\ or\ PL\}}$ $NP_{X(class\ 1-n)}$ (silent)
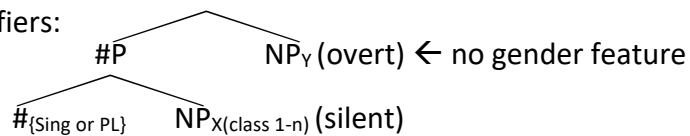
My pilot study of Xhosa agreement with conjuncts suggests that gender is a feature of *n* and, as Kramer proposes, that *n*s vary in the interpretability of their gender features. But despite class-specific strands of semantic unity like those noted in Table 2nd column, it seems that [+/-human] may be the sole interpretable content of Bantu gender/class.

B. <u>Competing analyses of how conjunct agreement works (and hence the theory of agreement):</u>
•Several (all?) existing proposals based on languages with masc/fem/neuter systems are incompatible with the Bantu data I have analyzed so far.

C. <u>Analysis and significance of [+/- human] default agreements *ba* and *zi:*</u> purely semantic (Corbett & Mtenje 1987) or syntactic (my proposal, to be sketched out here)?

<u>Roadmap for this talk</u>
•The [+/-human] complexities of Xhosa noun classes
•The challenge of conjoined singulars: [3+3] and [5+5] are anomalous in taking default agreement, leading to Taraldsen et al's proposal that sing/plural pairs do not share gender features
•The patterns of conjoined plurals: 4 and 6 are anomalous in a different way
•Hypothesis: 3/4 and 5/6 are uninterpretable genders; the others have some interpretable [+/-human] flavors which impact the grammar of conjunction by prohibiting deletion of *u*ns upon unsuccessful probing -- the route to obtaining "default agreement".

2.   Xhosa noun classes
2.1   Classes 1 and 2: canonical [+human] classes[1]

(9) a.   u-m-ntwana/a-ba-ntwana   b.   u-m-fazi/a-ba-fazi
           1-1-child/2-2-child   1-1-woman/2-2-woman
           'child/ren'   'woman/women'

     c.   u-m-dala/a-ba-dala   d.   u-m-ntu/a-ba-ntu
           1-1-adult/2-2-adult   1-1-person/2-2-person
           'adult/s'   'person/people'

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[1] While many class 1/2 nouns ending in *-i* are deverbal, it is not a hard and fast rule that such nouns appear in these classes if [+human]. For example, the term for 'expert/scientist' is class 7/8 *i-s-az-i/i-z-azi,* derived from *ukwaza* – 'to know'. Two terms for 'singer' are class 1/2 *u-m-cul-i/a-ba-cul-i* and class 9/10 *im-vum-i/i-im-vum-i,* derived from two verbs 'to sing' *ukucula* and *ukuvuma.*

e. u-m-hlebi/a-ba-hlebi
1-1-gossip/2-2-gossip
'gossiper/s'

f. u-m-ongameli/a-b-ongameli
1-1-president/2-2-president
'president/s'

g. u-m-mi/a-be-mi
1-1-citizen/2-2-citizen
'citizen/s'

h. u-m-hleli/a-ba-hleli
1-1-editor/2-2-editor
'editor/s'

2.2   1a and 2a: mostly [+human] but some [-human], including all alphabet letters

(10) a. u-mama/oo-mama
1a-mother/2a-mother
'mother/s'

b. u-Loyiso/oo-Loyiso
1a-Loyiso/2a-Loyiso
'Loyiso/Loyiso and company'

(11) a. u-lolilwe/oo-lolilwe
1a-train/2a-train
'train/s'

b. u-matshini/oo-matshini
1a-machine/2a-machine
machine/s'

c. u-nomadukudwane/oo-nomadukudwane
1a-scorpion/2a-scorpion
'scorpion/s'

d. u-nokala/oo-nokala
1a-crab/2a-crab
'crab/s'

(12) a. u-mati/oo-mati
1a-singleton/2a-pair
'(one of) a pair'

b. u-senza/oo-senza
1a-squash/2a-squash
'squash'

c. u-bhaka/oo-bhaka
1a-rucksack/2a-rucksack
'rucksack/s'

(13) a. <u>U-L om-nye</u> u-se tafile-ni
1a-L 1-one 1SA-LOC table-LOC
'One L is on the table.'

b. <u>Oo-L a-ba-bini</u> ba-se tafile-ni
2a-L 2-2-two 2SA-LOC table-LOC
'Two Ls are on the table.'

2.3   Classes 3 and 4: mostly [-human] (canonically branching) but a few [+human], stigmatized

(14) a. u-m-thi/i-mi-thi
3-3-tree/4-4-tree
'tree/s'

b. u-m-pesika/i-mi-pesika
3-3-peach/4-4-peach
'peach trees'

c. u-m-hla/i-mi-hla
3-3-day/4-4-day
day/s

d. u-m-pu/i-mi-pu
3-3-gun/4-4-gun
'gun/s'

d. u-m-ba/i-mi-ba
3-3-issue/4-4-issue
'issues/s'

e. u-mu-moya/i-mi-moya
3-3-wind/4-4-wind
'wind/s'

(15) a. u-m-gewu/i-mi-gewu
3-3-criminal/4-4-criminal
'criminal/s'

b. u-m-lwelwe/i-mi-lwelwe
3-3-cripple/4-4-cripple
'cripple/s'

c. u-m-lonji/i-mi-lonji
3-3-singer/4-4-singer
'singer/s' (rare)

d. u-m-khovu/i-mi-khovu
3-3-goblin/4-4-goblin
'goblin/s' (also leprechaun or zombie)'

4

2.4   Classes 5 and 6: [-human], and many [+human]; some 6s are not plurals of 5

(16)   a.   i-khowa/a-ma-khowa   b.   i-li-so/a-me-hlo
              5-mushroom/6-6-mushroom   5-eye/6-6-eye
              'mushroom/s'   'eye/s'

        c.   i-li-tye/a-ma-tye   d.   i-gama/a-ma-gama
              5-stone/6-stone   5-word/6-word
              'stone/s'   'word/s or name/s'

        e.   i-khaya/a-ma-khaya   f.   i-hobe/a-ma-hobe
              5-home/6-6-home   5-dove/6-6-dove
              'home/es'   'dove/s'

        g.   i-li-fu/a-ma-fu   h.   i-cici/a-ma-cici
              5-5-cloud/6-6-cloud   5-earring/6-6-earring
              'cloud/s'   'earring/s'

        i.   a-ma-nzi   j.   i-si-ko/a-ma-siko
              6-6-water   7-7-tradition/6-6-tradition
              'water'   'traditions'

(17)   a.   i-sela/a-ma-sela   b.   i-butho/a-ma-butho
              5-thief/6-6-thief   5-warrior/6-warrior
              'thief/thieves'   'warrior/s'

        c.   i-wele/a-ma-wele   d.   i-khoboka/a-ma-khoboka
              5-twin/6-6twins   5-slave/6-6-slave
              'twin/s'   'slave/s'

        e.   i-qhawe/a-ma-qhawe   f.   i-gqwetha/a-ma-gqwetha
              5-hero/6-6-hero   5-lawyer/6-6-lawyer
              'hero/es' (brave person, warrior) 'lawyer/s'

        g.   i-gqirha/a-ma-gqirha   h.   i-qina/a-ma-qina
              5-healer/6-6-healer   5-middle.aged/6-6-middle.aged
              'traditional healer/s'   'middle-aged person/people'

        i.   i-gosa/a-ma-gosa   j.   i-polisi/a-ma-polisi
              5-official/6-6-official   5-police/6-6-police
              'official/s'   'policeman/policemen'

        k.   in-doda/a-ma-doda   l.   u-m-Xhosa/a-ma-Xhosa
              9-9man/6-6-man   1-1-Xhosa/6-6-Xhosa
              'man/men'   'Xhosa person/Xhosa people, nation'

2.5   Classes 7 and 8: many [-human] incl. all language names, and many [+human]

(18) a.   i-si-Zulu   b.   i-si-hlahla/i-zi-hlahla
           7-7-Zulu   7-7-bush/8-8-bush
           'Zulu language'   'bush/es' (also wrist/s)

c. i-s-andla/i-z-andla
7-7-hand/8-8-hands
'hand/s'

d. i-nto/i-zi-nto
9-thing/8-8-things
'thing/s'

e. i-si-khakha/i-zi-khakha
7-7-skirt/8-8-skirt
'skirt/s'

f. i-si-bane/i-zi-bane
7-7-lamp/8-8-lamp
'lamp/s'

g. i-si-dalwa/i-zi-dalwa
7-7-creature/8-8-creature
'creature/s'

h. i-si-qaqa
7-7-unconsciousness
'unconsciousness, blackout'

(19) a. i-si-bonda/i-zi-bonda
7-7-headman/8-8-headman
'headman/men'

b. i-si-hlobo/i-zi-hlobo
7-7-acquaintance/8-8-acquaintance
'acquaintance/s or friend/s'

c. i-si-caka/i-zi-caka
7-7-servant/8-8-servant
'servant/s'

d. i-si-bhanxa/i-zi-bhanxa
7-7-fool/8-8-fool
'fool/s'

e. i-si-thulu/i-zi-thulu
7-7-deaf.person/8-8-deaf.person
'deaf person/deaf people'

f. i-s-azi/i-z-azi
7-know-nom/8-8-know-nom
'expert/s, scientist/s'

g. i-si-porho/i-zi-porho
7-7-ghost/8-8-ghost
'ghost/s'

h. i-si-tyebi/i-zi-tyebi
7-7-rich.person/8-8-rich.person
'rich person/people'

i. i-s-anuse/i-z-anuse
7-7-diviner/8-8-diviner
'diviner/s'

j. i-si-gulana/i-zi-gulana
7-7-patient/8-8-patient
'patient/s'

2.6   Classes 9 and 10: animals, miscellancy, humans, some pluralizing in 6

(20) a. i-nja/i-zi-nja
9-dog/10-10-dog
'dog/s'

b. i-ndlovu/i-i-ndlovu
9-elephant/10-10-elephant
'elephant/s'

c. i-nkomo/i-i-nkomo
9-cow/10-10-cows
'cow/s'

d. i-ncwadi/i-i-ncwadi
9-book/10-10-books
'book/s'

e. i-ndawo/i-i-ndawo
9-place/10-10-place
'place/es'

f. i-ndaba/i-i-ndaba
9-piece.of.news/10-10-piece.of.news
'news item/s'

g. i-n-tloko/i-i-n-tloko
9-9-head/10-10-head
'head/s'

h. in-gonyama/i-in-gonyama
9-lion/10-10-lion
'lion/s'

(21) a. In-tombi/i-in-tombi
9-young.lady/10-10-young.lady
'young lady/ladies'

b. in-gcali/i-in-gcali
9-expert/10-10-expert
'expert/s'

c. im-bongi/i-im-bongi
    9-poet/10-10-poet
    'poet or praise singer/s'

d. im-fama/i-im-fama
    9-blind.person/10-10-blind.person
    'healer/s'

e. i-nkawu/i-in-kawu
    9-albino/10-albino
    'albino/s (derogatory)'

f. in-gelosi/i-in-gelosi
    9-angel/10-10-angel
    'angel/s'

g. i-nkwekwe/a-ma-kwenkwe
    9-boy/6-6-boys
    'boy/s'

h. i-ndoda/a-ma-doda
    9-man/6-6-man
    'man/men'

i. i-nkosikazi/a-ma-khosikazi
    9-wife/6-6-wife
    'wife/married lady/ies'

j. i-nkosi/a-ma-khosi
    9-king/6-6-king
    'king/s or chief/s'

k. i-ntombazana/a-ma-ntombazana
    9-girl/6-6-girl
    'girl/s'

2.7 A note on agreement: not generally sensitive to the [+/-human] status of the controller, instead tracking its noun class.

(22) a. U-m-<u>bhingqo</u> <u>u</u>-se tafile-ni.
         3-3-skirt 3SA-LOC table-LOC
         'The skirts are on the table.'

b. U-m-gewu <u>u</u>-ya-sebenza.
    3-3-criminal 3SA-DISJ-work
    'The criminal is working'

(23) a. I-<u>mi-bhingqo</u> <u>i</u>-se tafile-ni.
         4-4-skirt 4SA-LOC table-LOC
         'The skirts are on the table.'

b. I-<u>mi-gewu</u> <u>i</u>-sebenza ndawonye.
    4-4-criminal 4SA-work together
    'The criminals work together'

(24) a. I-<u>zi-tyebi</u> <u>zi</u>-ya-sebenz-a.
         8-8-rich 8SA-DISJ-work-FV
         'The rich men are working.'

b. I-zi-bane <u>zi</u>-se tafile-ni.
    8-8-lamp 8SA-LOC table-LOC
    'The lamps are on the table.'

3. Exceptional agreement with conjoined singulars
3.1 Cases where we might expect a default strategy to kick in

Agreement with conjoined nominals is typically taken from plural noun classes 8 and/or 10[2] for non-humans and 2 for human-denoting nouns, regardless of their intrinsic classes (Corbett 1983, 1991, 2006, Corbett & Mtenje 1987, De Vos & Mitchley 2012, Diercks et al 2015, Givon 1970, Marten 2000, 2005, Roberts & Wolontis 1974, Schadeberg 2001, Simango 2012, and Voeltz 1971, Mitchley 2015). Analyses: default or semantic agreement.

(25) a. Mbale na ka-temo **v**-a-sow-a.   [ciNsenga; Simango 2012: 178]
         9.plate and 12-axe SC8-past-miss-fv
         'The plate and the axe are missing.'

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[2] Class 8 and 10 AGR are homophonous in Xhosa; hereafter for simplicity I gloss the prefix class 8.

   b.   U-m-nqathe   ne-qanda **zi**-se   tafile-ni.   [Xhosa; Mitchely 2015:115]
              3-carrot   and.5-egg SC8/10-loc table-loc
              'The carrot and the egg are on the table.'

    c.   U-mu-bíírá ní-í-ri-gena   m-**bí**-síir:e   [Kuria; from Diercks et al 2015:31]
              3-3-ball   and-5-5-stone foc-SC8-disappear.pst.fv
              'The ball and the stone disappeared.'

(26) a.   U-m-fundi   ne-polisa   **ba**-ya-baleka   [Xhosa; Mitchley 2015:115]
              1-1-student and.5-policeman SC2-pres-run
              'The student and the policeman are running.'

    b.   Li-doda na m-simbi   **w**-e-fwik-a   mailo   [ciNsenga; Simango 2012:179]
              5-man and 1-girl   SC2-pst-arrive-fv yesterday
              'The man and the girl arrived yesterday.'

    c.   Axi-kelema   ni   buchara **vo**   vulavula.   [Xitsonga; Mitchley 2015:65]
              def-7-scoundrel and   9.bucher SC2.pres   talk
               'The scoundrel and the butcher are talking.'

(27) Default agreement rules for Bantu, commonly assumed:
      a. If singular [+human] nouns are conjoined, agreement is class 2 *ba-*.
      b. If singular [-human] nouns are conjoined, agreement is class 8 *zi-*.

3.2   Cases where we might expect regular plural agreement

Taraldsen et al (2018): gender approach to noun classes can't be right because conjoined singulars *of the same class* also take default agreement, rather than that of the corresponding plurals. Their conclusion: Bantu nouns have no intrinsic gender features. Each singular and each plural class is a distinct gender, added by a null N specifier.

(28) a.   U-m-bhingqo no-m-nqathe   **zi/*i**-se-tafile-ni.   [Xhosa; Taraldsen et al 2018]
              3-3-skirt   and-3-3-carrot SC8/*SC4-table-LOC
              'A skirt and a carrot are on the table.'

    b.   I-mi-bhingqo/i-mi-nqathe   **i**-se-tafile-ni.
              4-4-skirt/ 4-4-carrot   SC4-table-LOC
              'The skirts/carrots are on the table.'

(29) a.   I-li-tye   ne-qanda **zi/*a**-khataza   i-n-taka.
              5-5-stone and.5-egg SC8/*SC6-annoy   9-9-bird
              'The stone and the egg annoy the bird.'

    b.   A-ma-tye/a-ma-qanda **a/*zi**-khataza   i-n-taka
              6-6-stone/6-6-egg   SC6/*SC8-annoy 9-9-bird
              'The stones/eggs annoy the bird'

(30) a.   U-m-gewu no-m-lwelwe   **ba**/*i-sebenza   ndawonye.
              3-3-criminal and.3-3-cripple SC2/*SC4-work   together
              'A criminal and a cripple are working together.'

    b.   I-mi-gewu   /i-mi-lwelwe **i**-sebenza ndawonye.
              4-4-criminal/4-4-cripple   SC4-work together
              'The criminals/cripples work together'

(31) Class prefixes are specifiers:
Taraldsen et al (2018) #P NP$_Y$ (overt) ← no gender feature

#$_{\{Sing\ or\ PL\}}$ NP$_{X(class\ 1-n)}$ (silent)
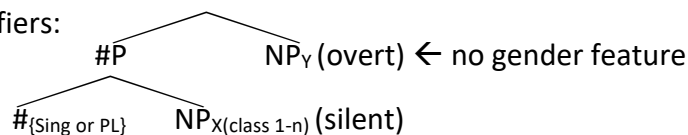
Some silent NPs (those of classes 3 and 5) cannot combine with plural.

3.3 Parallels in languages with masc/fem/neuter gender (Corbett 1983, Boskovič 2009 a.o.)
(32) and (33) are Slovenian; (34) is Serbo-Croatian

(32) to   drevo (neut) in   gnezdo (neut)   na njem mi   bosta ostala (masc dual) v spominu.
     that tree   and nest   on it   to-me will   remain   in memory

(33) *Jedno tele   i   jedno   pašče   su   juče   prodana.
      one   calf.neut   and one   dog.neut are   yesterday sold.pl.neut

(34)   a. *Juče   su uništena   jedno selo   i   jedna varošica.
           yesterday are destroyed.pl.neut one   village.neut and one   town.fem

        b. *Juče   su uništene   jedna varošica i   jedno selo.
           yesterday are destroyed.pl.fem one   town.fem   and one   village.neut

        c. Juče   su *uništeni*   jedna selo   i   jedno varošica.
           yesterday are destroyed.pl.masc   one village.neut and one   town.fem

        d. Juče   su *uništeni*   jedna varošica i   jedno selo.
           yesterday are destroyed.pl.masc one   town.fem and   one   village.neut

Analysis of Boskovič (2009) (see also Marušič et al 2007): &P is specified for number features only. When a uPhi probe on a head H (such as the SC participle) probes &P for number and gender values, it succeeds in obtaining the plural value alone.

(35) a.   Agree (T, &P) b.
     H$_{\_uNum,\ \_uGen}$ vP   →   H$_{PLuNum,\ \_uGen}$ vP

     &P$_{[Plural]}$ …   &P$_{[Plural]}$ …

Default/semantic resolution rules follow, whether the genders of conjuncts mismatch or match.

3.4 Vanilla cases: conjoined singulars taking regular plural agreement

(36) a. U-loliwe   no-matshini   ba-/*zi-se   galaji-ni
        1a-train   and.1a-machine   2SA-/*8SA-LOC   garage-LOC
        'The train and the machine are in the garage.'

     b. U-nomadukudwane no-nokala   ba-/*zi-ya-tya.
        1a-scorpion   and.1a-crab 2SA-/*8SA-DISJ-eat-FV
        'The scorpion and the crab are eating.'

     c. U-dyakalashe no-matshini   ba-/*zi-se   gadi-ni
        1a-jackal   and.1a-machine 2SA-/*8SA-LOC   garden-LOC
        'The jackal and the machine are in the garden.'

(37) a.　U-L̲ ̲o̲m̲-̲n̲y̲e̲　u̲-se　tafile-ni　　　　　　　　　　　　　[Xhosa]
　　　　1a-L 1-one　1SA-LOC　table-LOC
　　　　'One L is on the table.'

　　b.　U̲-̲L̲ ̲ ̲n̲o̲-̲M̲　b̲a̲-/*zi-se　tafile-ni
　　　　1a-L and.1a-M　2SA/*8SA-LOC　table-LOC
　　　　'The L and the M are on the table.'

(38) a.　I̲-̲s̲-̲a̲n̲u̲s̲e̲　n̲e̲-̲s̲-̲a̲n̲g̲o̲m̲a̲　z̲i̲-sebenz-a　ndawonye.
　　　　7-7-diviner and.7-7-healer　8SA-work-FV together
　　　　'The diviner and the healer work together.'

　　b.　I̲-̲s̲i̲-̲t̲y̲e̲b̲i̲ ̲n̲e̲-̲s̲i̲-̲b̲h̲a̲n̲x̲a̲ z̲i̲-ya-sebenz-a.
　　　　7-7-rich　and.7-7-fool 8SA-DISJ-work-FV
　　　　'The rich man and the fool are working.'

(39) I̲-̲n̲-̲d̲a̲d̲i̲　　n̲e̲-̲n̲-̲t̲l̲e̲b̲i̲　z̲i̲-ya-cula.
　　9-9-swimmer　and.9-9-gossip 8/10SA-/2SA-DISJ-sing-FV
　　'The swimmer and the gossip are singing.'

(40) A̲g̲r̲e̲e̲m̲e̲n̲t̲ ̲w̲i̲t̲h̲ ̲c̲o̲n̲j̲o̲i̲n̲e̲d̲ ̲s̲i̲n̲g̲u̲l̲a̲r̲s̲ ̲i̲n̲ ̲X̲h̲o̲s̲a̲
　　a. [-human] nouns: class 8 *zi-*.
　　b. [+human] nouns intrinsically class 7 or 9: *zi-.*
　　c. Nouns intrinsically class 1 or 1a, whatever their value for [+/-human]: class 2 *ba-*.
　　d. [+human] nouns not in classes 7, or 9: class 2 *ba-*

For Taraldsen et al, the vanilla cases indicate that some null specifiers can combine with plural. But having seen that 3 and 5 are special, we'll see next that 4 and 6 are too. I'll argue that this confirms shared gender features underlie singular/plural class pairings, and a "little *n*" approach.

4.　Adding conjoined plurals to the empirical picture

Eight speakers, fill-in-the blank task for preverbal [+human] plural conjoined DPs. Twenty combinations of class features = 160 cases. Since class 8 and 10 agreement are indistinguishable, I considered the balance between LCA, FCA, and default on 144 cases.

 F̲C̲A̲ (first conjunct agreement) is generally preferred:

(41)　A̲-ba-ntwana　nee-n-tombi　b̲a̲-ya-cula.　　　　　[2+10: FCA chosen by 8 out of 8 speakers]
　　　2-2-children　and.10-10-girls 2SA-DISJ-sing-FV
　　　'The children and the girls are singing.'

(42) a.　I̲-̲i̲n̲-̲t̲o̲m̲b̲i̲ na-**ba-ntwana**　z̲i̲/**ba**-ya-cul-a.　　　[10+2: F̲C̲A̲>**LCA** 5:3]
　　　　10-10-girls and.2-2-children　8SA/2SA-DISJ-sing-FV
　　　　'The young ladies and the children are singing.'

　　b.　I̲-̲z̲a̲-̲n̲u̲s̲e̲　　na-**ba-ntwana**　z̲i̲/**ba**-ya-cul-a.　　　[8+2: F̲C̲A̲ >LCA 6:2]
　　　　 8-8-mediums　and.2-2-children　8SA-DISJ-sing-FV
　　　　 'The young ladies and the children are singing.'

　　c.　I̲-̲i̲n̲-̲t̲o̲m̲b̲i̲　n**a-ma-polisa**　z̲i̲/**a**/*ba*-ya-cul-a.　　[10+6: F̲C̲A̲>**LCA** & *default* 6:1:1]
　　　　10-10-girls and.6-6-police　8SA/6SA/2SA-DISJ-sing-FV
　　　　'The young ladies and the policemen are singing.'

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d. A-ma-gqirha ne-z-anuse   a-sebenz-a ndawonye.   [6+8: FCA>default>LCA]
6-6-doctors   and.8-8diviners6SA-work-FV together
'The traditional doctors and the diviners are working together.'
[results: FCA x 5, default x 1, FCA or default x1, LCA x 1]

LCA (last conjunct agreement) preferred if DP1 is class 4 or 6, and DP2 is class 2:

(43) I-mi-gewu   na-**ba-ntwana**   **ba**/i/zi-ya-cul-a.   [**LCA**>FCA & [-human] default 5:2:1]
4-4-criminals and.2-2-children 2SA/4SA/8SA-DISJ-sing-FV
 'The criminals and the children are singing.'

(44) A-ma-polisa na-**ba-ntwana**   **ba**/i-ya-cul-a.   [**LCA**>FCA 6:2]
6-6-polisa   and.2-2-children 2SA-DISJ-sing-FV
'The policemen and the children are singing.'

Most variable results: [4+6] and [6+4]:

(45) I-mi-gewu   na-ma-gqirha   __ -sebenz-a ndawonye.   [*default* > FCA & LCA]
4-4-criminals and.6-6-doctors   -work-FV   together
'The criminals and the traditional doctors are working together.'
[Results: FCA x 2, LCA x 2, default x3, default and FCA equally good x 1]

(46) A-ma-gqirha ne-mi-gewu   a-ya-sebenz-a.   [FCA>default >LCA]
6-6-doctors   and.4-4-criminals 6SA -DISJ-work-FV
'The traditional doctors and the criminals are working.'
[Results: FCA x 4, default x 3, FCA or LCA x 1]

Table 3: Agreement choices for mismatching [+human] plural conjuncts ≠ [8+10] and [10+8]

FCA	LCA	FCA or LCA	Default	FCA or default	LCA or default
77	31	10	19	4	3

Table 4: Agreement choices for [+human] [4+n]

FCA	LCA	FCA or LCA	Default	FCA or default	LCA or default
6	12	0	9	2	0

(47) Hierarchies of preference in agreement with conjoined, preverbal [+human] subjects:

(i)   2>4
(ii) 2>6
(iii) FCA>LCA>default

Post-verbal subjects: only FCA is possible.

(48) a. A-ya-cul-a   a-ma-polisa   nee-n-tombi.
6SA-DISJ-sing-FV 6-6-police   and.10-10girls
'The policemen and the girls are singing.'

b. Zi-ya-cul-a   i-in-tombi   na-ma-polisa.
10SA-DISJ-sing-FV 10-10-girls   and.6-6-police
'The girls and the policemen are singing.'

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c. *<u>Zi</u>-ya-cul-a a-ma-polisa ne<u>e-n-tombi</u>.
10SA-DISJ-sing-FV 6-6-police and.10-10girls
[Intended: The policemen and the girls are singing.]

d. *<u>A</u>-ya-cul-a i-in-tombi <u>na-ma-polisa</u>.
6SA-DISJ-sing-FV 10-10-girls and.6-6-police
[Intended: The girls and the policemen are singing.]

e. *_Ba_-ya-cul-a i-in-tombi na-ma-polisa.
2SA-DISJ-sing-FV 10-10-girls and.6-6-police
[Intended: The girls and the policemen are singing.]

f. *_Ba_-ya-cul-a a-ma-polisa nee-n-tombi.
2SA-DISJ-sing-FV 6-6-police and.10-10girls
[Intended: The policemen and the girls are singing.]

(49) T_{uPhi} ... &P[Plural] DP1 is highest and closest

        $DP1_{\alpha gen.\#}$
              & $DP2_{\beta gen.\#}$

Clearly, it is when &P raises to preverbal position that other factors come into play (see Boskovič 2009 among others on this pattern in a range of languages).

Conjoined [-human] Ns: Recall: [3+3] and [5+5] take default _zi._ Plural classes 8, 10, and default being _zi_ for [-humans], 4 and 6 are of more interest.

(50) <u>I-mi-nqathe</u> n**a-ma-qanda** i-/**ba-**/_zi_-se tafile-ni.   [_default_>FCA>**LCA** 4:2:1]
4-4-carrot and.6-6-egg 4SA/2SA/8SA-be 9-table-LOC
'The carrots and the eggs are on the table.'

(51) <u>A-ma-qanda</u> n**e-mi-nqathe** i-/**ba-**/_zi_-se tafile-ni.   [_default_>FCA>**LCA** 4:2:1]
6-6-egg and.4-4-carrot 4SA/2SA/8SA-be 9-table-LOC
'The eggs and the carrots are on the table.'

(52) a. I-mi-nqathe **ne-zi-tya** **zi**-se tafile-ni.   [LCA/default: six speakers]
4-4-carrot and.10-10-plate 8SA-be 9-table-LOC

b. <u>I-mi-nqathe</u> ne-zi-tya i-se tafileni.   [<u>FCA</u>: two speakers]
4-4-carrot and.10-10-plate 4SA-be 9-table-LOC
'The carrots and the plates are on the table.'
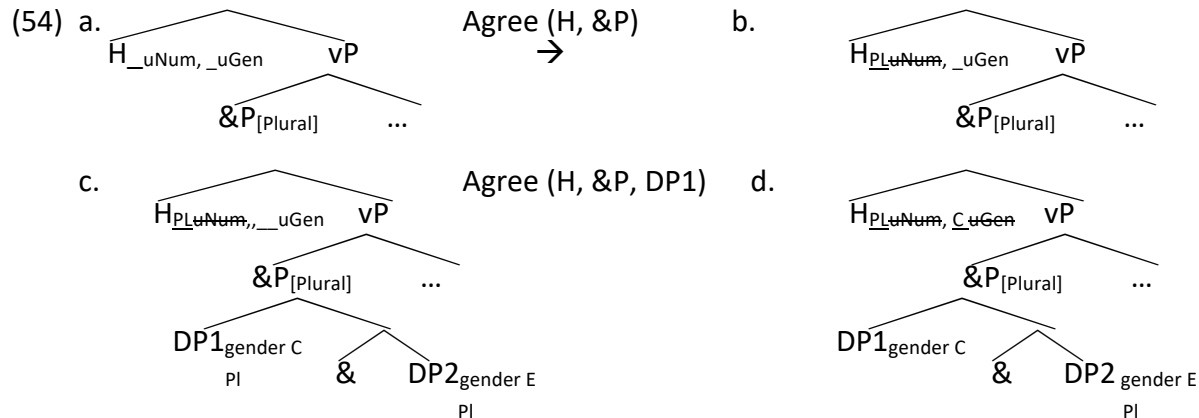
Postverbal subjects: FCA only, as with [+human] Ns.

(53) a. <u>I-phel-ile</u> <u>i-mi-funo</u> na-ma-qanda.
4SA-be.finished-DISJ 4-4-greens and.6-6-eggs
'The greens and the eggs are finished.'

b. <u>A-phel-ile</u> <u>a-ma-qanda</u> ne-mi-funo.
6SA-be.finished-DISJ 6-6-eggs and.4-4-greens
'The eggs and the greens are finished.'

c. *<u>I</u>-phel-ile a-ma-qanda <u>ne-mi-funo</u>.

d. *<u>A</u>-phel-ile i-mi-funo   na<u>-ma-qanda</u>.

e. *<u>Zi</u>-phel-ile a-ma-qanda ne<u>-mi-funo</u>.

5. Some hypotheses based on the Xhosa results
5.1 A proposal for default agreement with conjoined singulars of classes 3 and 5

Boskovič (2009): When probing of &P fails to return a gender value, the probe tries DP1. If DP1 is plural, Multiple Agree yields successful valuation by DP1's gender feature.

(54) a.

H_uNum, _uGen   vP

&P[Plural]   ...

Agree (H, &P)
→

b.

H~PLuNum~, _uGen   vP

&P[Plural]   ...

c.

H~PLuNum,,~__uGen   vP

&P[Plural]   ...

DP1~gender C~
Pl   &   DP2~gender E~
Pl

Agree (H, &P, DP1)

d.

H~PLuNum, C uGen~   vP

&P[Plural]   ...

DP1~gender C~
&   DP2~gender E~
Pl

(55) a. <u>A</u>-ya-cul-a   <u>a-ma-polisa</u>   nee-n-tombi.
6SA-DISJ-sing-FV 6-6-police   and.10-10girls
'The policemen and the girls are singing.'

b. <u>I</u>-za-nuse   na-ba-ntwana   <u>zi</u>-ya-cul-a.
8-8-mediums and.2-2-children 8SA-DISJ-sing-FV
'The young ladies and the children are singing.'

But if DP1 is singular, Multiple Agree fails. Unsuccessful probing deletes the DP's gender feature, if uninterpretable.

(56) *n*s for Xhosa, reflecting conjunct agreement phenomena

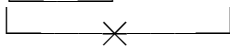|		
Classes 1/2 = Carstens's Gender A:	n_{A1}	*i* [human]
	n_{A2}	(plain, for arbitrary members)
Classes 3/4 = Carstens's Gender B	n_B	(plain, for all members)
Classes 5/6 = Carstens's Gender C	n_C	(plain, for all members)
Classes 7/8 = Carstens's Gender D	n_D	*i* [-human]
	n_{D2}	*u* (+human)
classes 9/10 = Carstens's Gender E	n_{E1}	*i* [-human]
	n_{E2}	*u* (+human)

(57) Internal structure of [+human] nouns in Xhosa outside of classes 1/2 is stacked (see Kramer 2015 on Somali nouns that are masculine in singular but feminine in plural).

    b.   u-m-ntwana/a-ba-ntwana   [in_A √MNTWANA]   A = classes 1/2
        1-1-child/2-2-children
        'child/ren'

    c.   i-butho/a-ma-butho   [n_C [in_A √BUTHO]]   C = classes 5/6
        5-warrior/6-6-warrior
        'warrior/s'

    d.   u-m-gewu/i-mi-gewu   [n_B [in_A √GEWU]]   B = classes 3/4
        3-3-criminal/4-4-criminal
        'criminal/s'

(58) Internal structure of [-human] nouns in Xhosa works the same way:

    a.   i-si-tya/i-zi-tya   [in_D √TYA]   D = classes 7/8
        7-7-plate/8-8-plate
        'plate/s'

    b.   u-m-bhingqo/i-mi-bhinqo   [n_B [in_D √BHINGQO]]   [3/4 [7/8…
        3-3-skirt/4-4-skirt
        'skirt/s'

    c.   i-li-tye/a-ma-tye   [n_C [in_A √TYE]]   [5/6 [7/8…
        5-5-stone/6-6-stone
        'stone/s'

(59) a. $T_{uNum, uGen}$ [&P [DP1 [$n_{B.sing}$ [$n_{A.sing}$ N]]] & [X]] → $T_{Pl\ uNum\ \_\ uGen}$ [&P [DP1 [~~$n_{B.sing}$~~ [$n_{A.sing}$ N]]&…

        Unsuccessful probing due to singular/plural mismatch deletes uninterpretable gender of unagreeably singular DP1

This proposal might lead us to expect that only [+human] conjoined DPs of class 1 would control class 2 agreement, and only conjoined [-human] DPs of class 7 and 9 would control class 8 agreement, because they bear the interpretable flavors of *ns.* But as we have seen, that is not what happens. Rather, it appears that those genders which have no interpretable flavors are deletable, and the rest are not. It therefore seems that the deletion process does not have direct access to the semantics of *ns.* The identity of the gender, but not the [+/-interpretable] status of a particular flavor of its *n* is what the deletion process can detect.

5.2   Extending the analysis to conjunct agreement with plurals

(60) Hierarchies of preference with conjoined, preverbal [+human] subjects:

    (i)   2>4
    (ii)   2>6
    (iii)   FCA>LCA>default

(61) I-mi-gewu   na-**ba-ntwana**   **ba**/i/zi-ya-cul-a.   [**LCA**>FCA & [-human] default 5:2:1]
4-4-criminals and.2-2-children 2SA/4SA/8SA-DISJ-sing-FV
    'The criminals and the children are singing.'

(62) A-ma-polisa na-**ba-ntwana**   **ba**/i-ya-cul-a.   [**LCA**>FCA 6:2]
6-6-polisa   and.2-2-children 2SA-DISJ-sing-FV
    'The policemen and the children are singing.'

Adapting Boskovič (2009), for &P to raise and satisfy EPP, the whole of it must be probed: &P, DP1, DP2. If uninterpretable gender of a plural DP1 is deleted upon probing, H can agree overtly with DP2.

Remaining puzzles: The above statement is deliberately weak. It makes deletion of DP1's gender optional, since FCA with class 6 routinely succeeds, though not where DP2 is class 2. And inconsistently, class 4 FCA is always dispreferred.

(63) I-mi-gewu   ne-en-tombi   __ -ya-cul-a.   [*default* & LCA > FCA]
4-4-criminals and.10-10-girls   DISJ-sing-FV
    'The criminals and the young ladies are singing.'
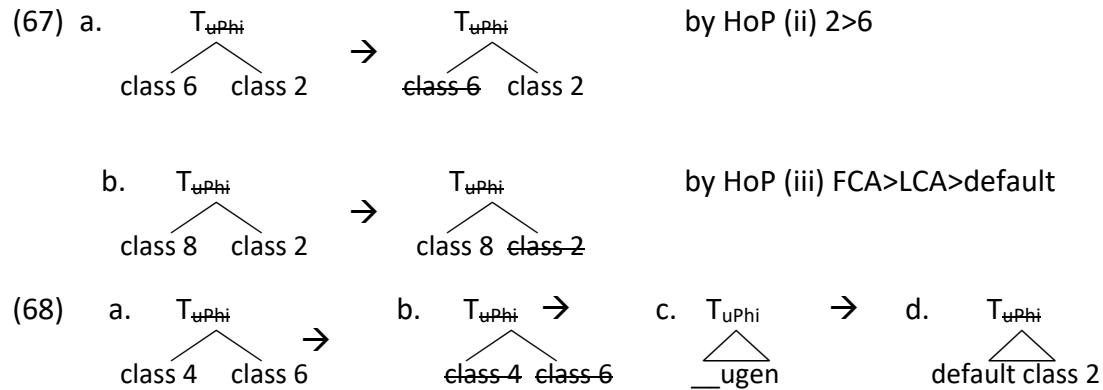   [Results: FCA x 2, LCA x 3, default x3]

(64) a.   A-ma-gqirha ne-z-anuse   a-sebenz-a   ndawonye.   [FCA>default>LCA]
6-6-doctors and.8-8diviners 6SA-work-FV together
    'The traditional doctors and the diviners are working together.'
    [results: FCA x 5, default x 1, FCA or default x1, LCA x 1]

    b.   A-ma-polisa ne-en-tombi   a-ya-cul-a.   [FCA>LCA>default]
6-6-police   and.10-10-girls 6SA-DISJ-sing-FV
    'The policemen and the young ladies are singing.'
    [results: FCA x 4, LCA x 2, FCA or LCA x 1, default x 1]

(65) I-mi-nqathe n**a-ma-qanda**   i-/**ba-**/zi-se   tafile-ni.   [*default*>FCA>**LCA** 4:2:1]
4-4-carrot   and.6-6-egg   4SA/2SA/8SA-be 9-table-LOC
    'The carrots and the eggs are on the table.'

(66) A-ma-qanda n**e-mi-nqathe** i-/**ba-**/zi-se tafile-ni.   [*default*>FCA>**LCA** 4:2:1]
6-6-egg   and.4-4-carrot 4SA/2SA/8SA-be 9-table-LOC
    'The eggs and the carrots are on the table.'

 Possibilities: (i) the 6 vs. 4 difference for [+humans] may be connected with the fact that many [+human] nouns of different singular classes have plurals in class 6, suggesting there is a class 6 (gender C plural) zero-affix meaning 'group'. Somehow this shields class 6 first conjuncts from preferential deletion, though why it doesn't extend to [6+2] is unclear! Perhaps increasing the number of class 6 nouns and being careful about their singulars will provide some insight?

How to produce formally the result that 4 and 6 FCA are completely passed over for class 2. A brute force alternative is impoverishment to reduce multiple gender features on a head, transferred by Multiple Agree to either & itself or T, with hierarchical relations/orders intact:

(67) a.   T$_{uPhi}$ →   T$_{uPhi}$ by HoP (ii) 2>6

          class 6   class 2   ~~class 6~~   class 2

       b.   T$_{uPhi}$ →   T$_{uPhi}$ by HoP (iii) FCA>LCA>default

          class 8   class 2   class 8 ~~class 2~~

(68)   a.   T$_{uPhi}$ b.   T$_{uPhi}$ →   c. T$_{uPhi}$ →   d.   T$_{uPhi}$

          →

      class 4   class 6   ~~class 4~~ ~~class 6~~   __ugen   default class 2

An approach like this is particular to plurals, so doesn't capture the fact that the singular counterparts to 4 and 6 are also anomalous in their behavior, when conjoined.

5.3   Summary

Under the analysis of Taraldsen et al, the differences between [3+3] and [5+5] on the one hand, and [7+7], [1+1], and [9+9] on the other, is that the classifier/specifiers of class 3 and 5 nouns cannot combine with plural. This section demonstrated that first conjuncts of plural classes 4 and 6 fail to control first conjunct agreement in key instances, in contrast with plural classes 2, 8, and 10. Treating 3/4 as a single gender, and 5/6 as another, both exceptional in lacking interpretable flavors, provides hope of a unified account of the atypical behavior of these singular/plural pairings.

6.   Further questions (for appropriate languages)

[a student and a policeman] said Agr-that the thief had escaped. (mismatched)

[a diviner and a healer] said Agr-that the thief had escaped. (i.e. 7+7)

 [students and policemen] said Agr-that the thief had escaped. (mismatched plural)

 [a student and a policeman] caught the thief Agr-how?

 [trains and lamps] collided how?

 [The policemen and the students] insulted each other.

 [+human] & [-human] and vice versa (across classes)

 [singular] + [plural] and vice versa (across classes)

Relevance of the particular predicate and/or nominal

Etc.

7.   Other approaches to conjunct agreement

Boskovič (2009): *u*gender of DP1 has to delete for &P to raise, yielding no choice but LCA in many cases of SV… order. This prediction has been falsified in various studies of Slavic languages, but comes close for Xhosa under the assumptions I've introduced about the classes.

Distributed Agree: Marušič et al (2015), Marušič & Nevins (to appear): agreement applies in two stages, Agree Link and Agree Copy. Agree Copy before linearization → highest conjunct agreement; Agree Copy after linearization → closest conjunct agreement because the structure is flattened out.

(69)   Agree-Copy before linearization: default gender or agreement with DP1, regardless of word order, because what's visible to syntax is hierarchical structure

a.   HP   b.   HP

H_{uPhi} …&$P_{[Plural]}$ …   &$P_{[Plural]}$ H′

DP1$_{\alpha gen.pl}$ DP1$_{\alpha gen.pl}$ H   …

&   DP2$_{\beta gen.pl}$ &   DP2$_{\beta gen.pl}$

(70)   Agree-Copy after linearization: default gender or closest conjunct agreement, because hierarchical structure ceases to be visible

a. H_{uPhi} DP1 & DP2   FCA with post-verbal subject

b.   DP1 & DP2 H_{uPhi} LCA with post-verbal subject

To capture the Xhosa hierarchies of preference for preverbal conjuncts would require massive look-ahead (hmm, the second conjunct is class 2, I better wait and do Agree Copy after linearizing).

Murphy & Puškar (2018): The head & can in principle obtain multiple gender values from its conjuncts by Agreeing with them, but which values it acquires depends on the order of application among the operations Merge, Agree Up, and Agree Down.

Agree Up>Merge>Agree Down: Agree Up applies vacuously before the first conjunct is present. Agree Down will successfully give &P the gender feature of its second (lower) conjunct, so the result must be LCA.

Agree Down>Merge>Agree Up, Agree Down is vacuous, but Agree Up successful. Hence & has features of the first conjunct and agreement must be FCA.

Like Distributed Agree, this provides no handle on the way both conjuncts' gender features impact agreement with conjuncts in Xhosa.

8.   Selected References

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