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Hyperactivity and Hyperagreement in Bantu

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Many Bantu languages exhibit A-movements and patterns of iterating agreement that are disallowed in Indo-European languages. In Minimalist theory, both agreement and movement are constrained by an Activity requirement stipulating that goals in Agree relations must have an unchecked uninterpretable feature. For Indo-European DPs the sole Activity feature in A-relations is Case; but I argue here that grammatical gender, a component of Bantu noun class, is uninterpretable too. Case and nominal gender differ in that the latter enters the syntax already valued. Assuming goal deactivation is a function of syntactic valuation, we derive the result that gender is an infinitely reusable Activity feature. Adjunction of Bantu N to D makes gender visible to all clause-level probes, and Bantu DPs are therefore able to A-move more freely than their Indo-European counterparts and to value iterating agreement. The proposals provide a unitary explanation for the existence in Bantu of Subject Object Reversal, locative inversion controlling subject agreement, hyper-raising, concord, left-edge agreement with operators, and multiple subject agreement. The syntax of gender argues that uninterpretable features need not be deleted from a syntactic object bound for the Conceptual-Intentional interface.

Key words: Activity, agreement, concord, gender, hyper-raising, inversion

1. Introduction

In this paper I connect two clusters of properties found in many Bantu languages. First of these is the presence of very abundant agreement in person, number, and gender features. This agreement iterates on all verbal categories of a compound tense construction, and can obtain its values from a broader range of expressions than is possible in Indo-European (IE) languages. Second and, I argue, relatedly, there are A-movements permitted in Bantu that are disallowed in IE languages. I will refer to the availability of unusual A-movements in Bantu as Hyperactivity (anticipating discussion that follows below). I will call the abundant, full-featured agreement phenomena Hyperagreement.

In Minimalist syntactic theory, movement and agreement are both products of the Agree relation and constrained by the Activity Requirement (Chomsky 2001; see 1 and 2). Given this, the coincidence of Hyperactivity and Hyperagreement in Bantu makes sense: a factor that broadens the availability of one process will likely impact the other.

(1) Agree (α,β) iff α c-commands β; α,β have matching features;
there is no γ with matching features that is closer to α than β.

(2) The Activity Requirement: each participant in an Agree relation must have an unchecked uninterpretable feature.

I argue that the concept of Activity in the Agree relation provides the key to understanding why many Bantu languages have Hyperactivity and Hyperagreement and IE does not. In particular, I propose that while unvalued Case is the core uninterpretable feature that allows IE DPs to satisfy (2), the gender component of Bantu noun class is also uninterpretable and therefore "activates" a goal DP. The gender feature of nouns is an unusual feature in being both uninterpretable and intrinsically valued. I argue that this permits nominal gender to participate in successive Agree relations, over and again, yielding Hyperagreement and Hyperactivity.

In IE languages with grammatical gender, an undifferentiated $u\phi$ bundle outside DP has no access to the gender feature of N because of a locality effect: the c-commanding person feature of D blocks access to it. Only participles, insensitive to person as a lexical property, can agree in gender and "see" it as a clause-level Activity feature in IE. But in Bantu, systematic N-to-D adjunction amalgamates all features of the noun with D, making gender consistently available to clause-level probes.

This paper consists of seven sections. Section 2 presents the relevant facts of Bantu agreement and A-movement. Section 3 argues that the gender component of Bantu noun class is uninterpretable. Section 4 shows that gender functions to activate a goal iteratively in concord, multiple subject agreement, and operator agreement. Section 5 proposes loci for the intrinsic versions of the features that agreement reflects. It also argues that the involvement of grammatical gender in clause-level agreement and movement processes of Bantu is due to the independently motivated process of N-to-D adjunction. Section 6 shows how Hyperactivity follows from the visibility of gender to clause level probes, explaining the constructions known as Subject-Object Reversal, locative inversion, and Hyper-raising. It also argues for a proposal in Diercks (to appear) that Bantu lacks abstract Case. Section 7 explores some final issues and conclusions, among them that uninterpretable features need not be deleted for a syntactic object to be

licit at the Conceptual-Intentional interface (see Epstein, Kitahara, and Seely 2010). I propose in section 7 that deactivation accompanies a DP's Case-valuation in IE because a formal feature can licitly have only one value, and Agree relations value DP's Case.

2. Hyperagreement and Hyperactivity

2.1 Hyperagreement

Bantu agreement differs from that of IE in at least three ways.

First, its features are generally broader than those of IE agreement, reflecting person and number distinctions and noun class (3a-c).[1] Following Carstens (1991), I take noun class to be composed of grammatical gender and number.

Second, Bantu agreement is more abundant than agreement in IE languages. In compound tense constructions like (3a-c), SA iterates on every verbal element of a clause unlike in IE (3d). In operator constructions it is common to see agreement with both the operator and the subject (see (4)).[2]

(3) a. *Khu*-b-ere *khu*-irukha. [Lusaamia]
IIPLSA-be-PST IIPLSA-run Iterating SA in person and number
'We were running.'

b. Juma *a*-li-kuwa *a*-me-pika chakula. [Swahili]
Juma 1SA-PST-be 1SA-PERF-cook 7food Iterating SA in gender and number
'Juma had cooked food.'

[1] In glosses, Arabic numerals preceding a noun indicate its noun class. SA = subject agreement, and Arabic numerals preceding SA indicate the noun class of the agreement. Roman numerals I, II, and III indicate first, second, and third person respectively. S indicates singular, and PL indicates plural; thus IIPL = second person plural. Though I gloss third person in Romance examples as IIIS/IIIPL, I gloss third person singular and plural of Bantu nouns referring to animates as Classes 1 and 2 respectively, following conventions of the literature. WHAGR indicates agreement with an operator. Other glossing conventions are F(EM) = feminine; M(ASC) = masculine; PRES = present; PST = past; ASP = aspect; NEG = negation; GEN = genitive; ACC = accusative; INF = infinitive; HAB = habitual; PERF = perfect; IMPERF = imperfect; FV = final vowel of Bantu verbs, which varies with mood and other clausal properties.

[2] In (3-4), Luganda data are taken from Pak (2007:2); Kinande data from Schneider-Zioga (2007:412); Kilega from Kinyalolo (1991:156); Swahili from Carstens (2001:5); Lusaamia data from Dennis Odalloh, consultant to a 2008 Field Methods class at University of Missouri. I thank him for his assistance.

c. Nzogu *zí*-kili *z*-á-twag-a maswá. [Kilega]
10elephant 10SA-be.still 10SA-ASP-stampede-FV 6farm
'The elephants are still stampeding over the farms.'

d. The elephant has been/*s stampeding/*s.

(4) a. Bikí *bi-b*-éte bá-ku-lyá? [Kilega]
8what 8WHAGR-2SA-ASP1 2SA-ASP2-eat
'What are they eating?'

b. Emikeeka abawala *gye-ba*-a-luka te-gi-gasa. [Luganda]
4mat 2girl 4WHAGR-2SA-PST-plait NEG-4SA-be.of.use
'The mats that the girls plaited aren't suitable.'

c. Ekihi *ky*o Kambale *a*-langira? [Kinande]
what 7WHAGR-C Kambale 1SA-saw
'What did Kambale see?'

Third, Bantu "subject" agreement (SA) need not reflect the features of the thematic subject (see Baker 2003, Carstens 2005, Henderson 2006a). When the thematic subject precedes the verb, SA reflects its features in both groups of languages (see (5)). But in an inversion construction such as locative inversion (see (6)) many Bantu languages show agreement with the preposed expression ((5a) and (6) from Kilega; see Kinyalolo 1991:27). In contrast, IE SA generally reflects the features of the logical subject whether or not another constituent precedes the verb (see (7)).

(5) a. Bána ta-*bá*-ku-kít-ag-a búbo. [Kilega]
2child NEG-2SA-PROG-do-HAB-FV 14that *Standard SVO order*
'Children don't usually do that.'

b. Children are/*is/*be sleeping.

(6) Mu-zízo nyumbá *mu*-á-nyám-é bána wálúbí.
18-10that 10house 18SA-A-sleep-FV 2child one.day.period *Locative inversion*
'There will sleep children in those houses tomorrow.'

(7) In the living room *is/are some of your toys.

Minimalist theory gives agreement relations a central role in syntax, but tends to treat their overt manifestations as idiosyncratic rather than principle-based. There is accordingly no accepted line of approach to explaining cross-linguistic contrasts like these. My analysis will take steps to fill this gap.

2.2 Hyperactivity

2.2.1 Subject-Object Reversal

It is well-established that A-movement options exist in Bantu that are unavailable in IE. One of these is an OVS construction found in a number of Bantu languages and frequently referred to as Subject-Object Reversal (SOR). Ndayiragije (1999:418-422) explores the construction in Kirundi and argues that the inverted object occupies the canonical subject position, Spec, TP. Among the considerable evidence he cites is the fact that it controls SA (8a); it can undergo *pro*-drop just like any other subject (8b); and in embedded clauses, it appears to the right of the complementizer (8c).

(8) a. Ibitabo *bi*-á-ra-somye Johani. [Kirundi]
8book 8SA-PST-read.PERF John *Subject-Object Reversal*
'John (not Peter) has read (the) books.'

b. *pro* Bi-á-ra-somye Johani.
8SA-PST-read.PERF John
'John (not Peter) has read them.'

c. Petero a-á-anse *kó* [$_{TP}$ ibitabo bi-ø-soma abáàna].
Petero 1SA-PST-refuse.PERF C 8book 8SA-PRES-read:IMPERF 2child
'Peter refused that children (not adults) read books.'

In addition, the preverbal object of an SOR construction patterns like a preverbal subject with respect to weak cross-over effects. Weak cross-over effects occur when either a preverbal subject or the fronted object of an SOR construction contains a pronoun binding a post-verbal quantificational expression (see the contrast between (9a) and (9b), from Ndayiragije 1999:423). Weak cross-over generally arises in grammar when an expression in an A-position binds a quantifier or variable; hence they support analysis of the position of inverted Bantu objects as an A-position – the canonical subject position.

(9) a. Umunyeshule weese$_i$ a-ø-ra-kunda umwarimu wiwe$_i$. [Kirundi]
1student 1every 1SA-PRES-like 1teacher 1of-him
'Every student$_i$ likes his$_i$ teacher.'

b. *Umwarimu wiwe$_i$ a-Ø-ra-kunda umunyeshule weese$_I$.
1teacher 1of-him 1SA-PRES-like 1student 1every
'Every student$_i$ likes his$_i$ teacher./His$_i$ teacher likes every student$_i$.'
(bound variable reading is out under both SVO and OVS readings)[3]

Kinyalolo (1991) provides a morphological argument from Kilega that the object in SOR occupies the same position as any other Kilega subject. Verbs agree with both subjects and operators, but in negative clauses, operator agreement (glossed WHAGR) appears to the left of negation (NEG), while subject agreement (SA) is to negation's right (10a-b). This makes sense if operator agreement spells out ϕ-features on C, while SA is on T, and NEG intervenes between the two categories (10c) ((10a,b) from Kinyalolo 1991:29; 58).

(10) a. Mutu t-*á*-ku-sol-ág-á maku wéneéne. [Kilega]
1person NEG-1SA-PROG-drink-HAB-FV 6beer alone
'A person does not usually drink beer alone.'
[Lit: Beer doesn't usually drink a person alone.]

b. Kúní *ku*-ta-*bá*-ku-yan-ág-á mu-kindi?
16where 16WHAGR-NEG-2SA-PROG-play-HAB-FV 18-7night
'Where don't they usually play at night?'

c. [$_{CP}$ WHAGR+C [$_{NegP}$ NEG [$_{TP}$ SA+T …]]]]

(11) shows that the inverted object in SOR controls SA to the right of negation, not operator agreement to negation's left (Kinyalolo 1991:29).

(11) Maku ta-*má*-ku-sol-ág-á mutu wéneéné. [Kilega]
6beer NEG-6SA-PROG-drink-HAB-FV 1person 1alone *Subject-Object Reversal*
'No one usually drinks beer alone.'
[Lit: Beer doesn't usually drink a person alone.]

For all the reasons cited above I conclude with Ndayiragije and Kinyalolo that objects move to canonical subject position in the SOR construction. If IE permitted this, then the literal translations of (8a) and (11) would be acceptable. (12) illustrates that they are not.

(12) a. *Books read John (not Paul).
b. *Beer doesn't usually drink a person alone.

[3] Ndayiragije 1999:421 provides this data and the judgment that the bound reading is unavailable on the SOR (OVS) interpretation of the sentence. Ndayiragije p.c. informs me that the bound reading is impossible under the SVO interpretation of the sentence as well and that, in contrast to both these cases, a pronoun within a fronted Kirundi operator can be bound by an argument, just like in the English *His chemistry book, every student should read,* and contra Henderson (2006b).

These facts make it clear that objects can undergo a kind of A-movement in some Bantu languages that is not at all available in IE; and that subjects in the relevant languages need not raise to Spec, TP for Case-licensing.

2.2.2 Transitive locative inversions

Raising of a locative phrase to Spec, TP is widely allowed in Bantu as I noted in 2.1 (see 6). In some languages this is possible even in a transitive clause (see the Kilega (13) from Kinyalolo 1991:251, and the Digo example in (14) from Diercks to appear).

(13) Ku-Lúgushwá *kú*-kili *ku*-á-twag-a nzogu maswá. [Kilega]
17- Lúgushwá 17SA-be.still 17SA-A-stampede-FV 10elephant 6farm
'At Lugushwa elephants are still stampeding over the farms.'
[Lit: At Lugushwa are still stampeding elephants farms.]

(14) Mo chumba-ni *mu*-na-andika mutu baruwa [Digo]
18.DEM 7room-LOC 18SA-CONT-write 1person 9letter
'Someone is writing a letter in the room'
[Lit: In the room is writing someone a letter.]

Locative inversion is much more tightly constrained in IE languages. An inverted locative phrase does not control SA, and the construction is restricted to sentences in which the verb is intransitive. This restriction has been related to a problem of Case valuation for the in situ arguments (see Alexiadou and Anagnosopoulou 2001).

2.2.3 Hyper-raising

Many Bantu languages exhibit raising out of a finite lower clause in a construction sometimes referred to as hyper-raising (see (15) and (16), from Carstens and Diercks to appear). Reconstructed readings for the surface subject of the higher clause argue that these are true raising constructions, not base-generated copy-raising like the English 'seems as if' construction.

(15) Efula yi-bonekhana i-na-kwa muchiri. [Lusaamia]
9rain 9SA-appear 9SA-FUT-fall tomorrow
'It seems that it will rain tomorrow'
[Lit: Rain seems will fall tomorrow. OK to say upon reading the forecast.]

(16) Chisaang'i chi-lolekhana chi-kona. [Lubukusu]
10animal 10SA-seem 10SA-sleep.PRES
'The animals seem to be sleeping.'
[OK to say if you're looking for animals and can't find any.]

Hyper-raising appears to be quite widespread in Bantu, having been documented for Kikuyu, Shona, and Kirundi (Harford Perez 1985); for Lubukusu (Diercks to appear); and for Zulu (Zeller 2006) (see also Carstens and Diercks to appear for full discussion and analysis of Lubukusu and Lusaamia Hyper-raising). In contrast, IE languages systematically prohibit raising out of any but an infinitival clause ((17a) vs. (17b)).

(17) a. * The animals seem [(that) <the animals> are sleeping].
b. The animals seem [<the animals> to be sleeping].

2.4 Agreement, A-movement, and Activity

As noted above, a subject is generally agreed with just once in IE languages, and the locus of SA is generally T(ense). Chomsky (2000) argues that the abstract Case feature of a DP is valued as Nominative in the Agree relation that simultaneously values the features of SA. Once this happens, the DP is "inactive" because after valuation, in the terminology of (2) (repeated below) its Case feature has been "checked".

(2) The Activity Requirement: each participant in an Agree relation must have an unchecked uninterpretable feature.

Assuming something along these lines to be true (with details to be fleshed out below), some property present in Bantu but absent in Indo-European must permit Bantu DPs to be "active" in Agree relationships that don't involve Case valuation. Something must also make the logical subject licit in Kilega and Kirundi but not in IE, when T agrees with some other expression (see also Baker 2003 and Carstens 2005). I argue below that the crucial factor in all of this is the gender component of noun class: gender is a valued but uninterpretable feature (*u*F), and in Bantu, systematic adjunction of N to D makes gender accessible to probes that cannot access it in IE.

3. Noun class and interpretability

Noun class suffuses the morpho-syntax of Bantu, determining inflection on both nouns and verbs. In Carstens (1991) I argue that noun class is a formal gender system (see also Corbett 1991) in which each pair of nominal prefixes is a gender-particular spelling out of number features. Carstens (1991) proposes the system on the basis of Swahili data. Examples (18)-(19) illustrate how it works for Lusaamia, a Luyia dialect.

(18) a. omukhana/abakhana
1girl/2girl
'girl/s'

b. omunwa/eminwa
3mouth/4mouth
'mouth/s'

[Lusaamia]

c. ebwoni/amabwoni
5potato/6potato
'potato/es'

d. esioka/ebioka
7noise/8noise
'noise/s'

e. embwa/embwa[4]
9dog/10dog
'dog/s'

(19) a. Bantu Genders for classes 1-10[5] (Carstens 1991)

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

b. *Sample Spell-Out rules yielding Lusaamia noun class prefixes*[6]

[Singular] < -- > /*mu-* / /__N
Gender A

[Singular] < -- > /*bu-* / /__N
Gender C

[4] Singular and plural nouns of classes 9/10 are homophonous, but agreement differentiates them:

(i) a. embwa eyange
9dog 9my
'my dog'

b. embwa echiange
10dog 10my
'my dogs'

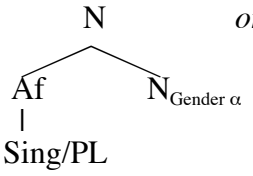
[5] See Carstens (1997) and section 6.2 for extension of this approach to locative classes. For reanalysis of apparently derivational uses of noun class and its prefixes in augmentatives and diminutives, see Carstens (1991) and (2008). Despite my commitment to the approach in (19a), I use the traditional noun class numbers in glosses for consistency with the Bantu linguistic literature.

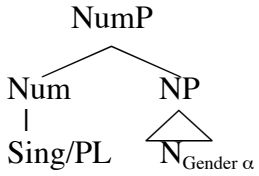
[6] I take these to be post-syntactic lexical insertion rules along the lines of Halle and Marantz (1993). Not reflected here are further rules to add the so-called pre-prefix or augment vowels of Lusaamia nouns.

[Plural] < -- > */ba-/* /__N
Gender A

[Plural] < -- > */ma-/* /__N
Gender C

Since most nouns can be made either singular or plural, number features are not a standard part of lexical listings. Proposals vary as to whether interpretable number is strictly a nominal affix or heads a syntactic category ((20a) vs. (20b); see Carstens 1991, Bernstein 1991, and Ritter 1992 for the latter view). For present purposes what matters is that interpretable number is not a lexical feature of each individual noun, and hence must be treated as underlyingly distinct from the gender component of class.

(20) a. 

or
b. 

The gender component of class, on the other hand, is largely a lexical property of Bantu nouns. It seems to be quite semantically arbitrary that e.g. Lusaamia *enande* – 'knife' is a noun of classes 5/6 (Gender C) while *esitiyo* – 'shovel' belongs to classes 7/8 (Gender D). Similarly, there is no basis in meaning on which to predict that Swahili *ndoo* – 'bucket' is in classes 9/10 (Gender E) while *kikapu* – 'basket' is found in classes 7/8 (Gender D). This information must be specified in the nouns' lexical listings. In the terminology of Chomsky (2000), this indicates that gender is intrinsically *valued*.

The above examples suggest that genders lack consistent meanings, and I accordingly propose that the gender component of class is *uninterpretable*, like structural Case. Consider that Swahili classes 7/8 contain, among other things, all language names; names for many concrete objects; the word for finger; and some deverbal nouns (see (21)). There is no component of meaning that all of these share which could be construed as the semantic content of the gender.

(21) a. Kiingereza
7english
'English language'

b. kikapu/vikapu
7basket/8basket
'basket/s'

[Swahili]

c. kiapo/viapo
7oath/8oath
'oath/s' (deverbal)

d. kidole/vidole
7finger/8finger
'finger/s'

Similarly, classes 3/4 include trees; arms and legs; terms for natural phenomena (smoke and moon); and words for mat, village, mouth, and load. Despite the identifiable semantic properties shared by some sub-groups of 3/4 nouns, nothing seems to unite all the cases.

(22) a. mkeka/mikeka
3mat/4mat
'mat/s'

b. mzigo/mizigo
3load/4load
'load/s'

c. mguu/miguu
3leg/4leg
'leg/s'

d. mji/miji
3village/4village
'village/s'

[Swahili]

There are stronger correlations of noun class and meaning, among them the fact that trees are consistently in Swahili classes 3/4 while most nouns referring to humans belong to a single gender, classes 1/2 (see (23); in Swahili other animates share this class as well).

(23) a. mtoto/watoto
1child/2child
'child/ren'

b. mkulima/wakulima
1farmer/2farmer
'farmer/s'

c. mwanafunzi/wanafunzi
1student/2student
'student/s'

[Swahili]

But if we take such facts to indicate that the noun class itself has semantic content, a uniform treatment of class becomes impossible because the conclusion cannot be generalized to cases such as (21)-(22). We can, on the other hand, maintain that the gender component of class is consistently uninterpretable simply by supposing that lexical redundancy rules map items with certain semantic features to particular genders. This allows us to recognize strands of meaning shared by some or all items of a gender without supposing that the gender itself is semantic. We can therefore accommodate both semantic arbitrariness and pockets of shared meaning within the same gender.

It is also relevant to note that loan words are sometimes assigned to genders on the basis of their phonological shapes. Swahili acquired a term for traffic circle, *kipilefti,* from the English 'keep left' (Welmers 1974) and *kitabu* 'book' based on the Arabic *kitab*. Both were added to Gender D (= classes 7/8), whose members have *ki-*/*vi-* prefixes in

singular and plural respectively. Plurals for these two borrowed nouns are thus *vipilefti* – 'traffic circles' and *vitabu* – 'books'. *Msikiti,* the borrowed word for 'mosque', is a member of Gender B (= classes 3/4), one of two genders in which singulars all begin in *m-* (the other is Gender A, an exclusive domain of nouns referring to animates).

In sum, while (21) shows that gender is an arbitrary component of lexical listings for many nouns, the patterns described above demonstrate that strategies exist for assigning underspecified or newly adopted nouns to genders based on semantic or phonological features. These disparate sources of noun class assignment are best accommodated under the assumption that class is a formal and meaningless grammatical feature in which a handful of predictable mapping principles like (24) are implicated.

(24) *Sample Bantu gender mapping rules:*

[human] →classes 1/2

[language name] →classes 7/8

[borrowed word for inanimates beginning with [m]] →classes 3/4

etc.

(24) is consistent with a proposal in Harris (1991) treating Spanish gender as a purely formal grammatical feature. Harris proposes the rules in (25) to account for correlations of grammatical and biological gender in Spanish. He argues that many stems referring to humans are stored in the lexicon underspecified for the semantic feature of biological gender. A rule he calls Human Cloning takes such a stem and turns it into a pair of stems, one with the semantic feature [male] and the other [female]. Then the Human Gender rule maps nouns with the female feature to feminine gender. Nouns without this feature become masculine gender by default. Subsequent rules attach the final vowels *–a* or *–o* of Spanish nouns, based in many (but not all) cases on grammatical gender.

(25) a. *Human Cloning*: [$Stem_i$, N, human] → [$Stem_i$, N, human, female]
→ [$Stem_i$, N, human, male]

b. *Human Gender*: female → f/[__ human]

c. *Illustration:*

i. *Human Cloning:* niñ- 'child' → [niñ-, N, human, female]
[niñ-, N, human, male]

ii. *Human Gender:* [niñ- N, human, female] → feminine

iii. *Final Vowel:* niñ+a – 'child (fem)'; niñ+o – 'child (masc)'

See Carstens 2008 and 2010 for extension of the approach to other strands of meaning-gender correspondences in Romance. I adopt the proposal advanced there that Romance gender is meaningless and uninterpretable, like that of Bantu (see also Zamparelli 2008). Thus we have arrived at the generalization in (26). Chomsky (2000, 2001) takes unvalued and uninterpretable to be biconditionally linked properties of features – a view that Pesetsky and Torrego (2007) argue should be revised. The evidence of grammatical gender supports their position.

(26) The grammatical gender of nouns is a valued, uninterpretable feature.

4 Gender and Activity

4.1 Gender agreement is independent of Case valuation

It has been noted before, albeit somewhat obliquely, that agreement in gender does not correlate with Case-valuation in the same way that agreement in person does. Chomsky (2000) proposes that an unaccusative past participle can agree with the same expression that values SA in a language like French (see (27)) because past participle agreement lacks person features. It is therefore not "ϕ-complete" and this prevents it from valuing the Case of its goal and deactivating it, these being automatic consequences of a full agreement relation. In Carstens (2001) I responded to this with the observation that SA in Romance systematically omits gender features, so ϕ-(in)completeness cannot explain the difference (see (28)). Carstens (2001) proposes instead to maintain the more traditional assumption that only heads lexically specified for the Case-"assigning" property can value Case (= T, P, and *v**). This loosens constraints on agreement theory so that it can be extended also to concord in gender and number features within DPs (see (29)).

(27) Elle est mort-*e* <elle>. [French]
IIIS.F be.IIIS dead-FS *Romance PPA includes gender*
'She is dead.'

(28) a. La chica quiere ir. [Spanish]
the.FS child(F) want.IIIS to.go *Romance shows no SA contrasts in gender*
'The girl wants to go.'

b. El chico quiere ir.
the.MS child(M) want.IIIS to go
'The boy wants to go.'

(29) a. *la* maison vert-*e* [French]
the.FS house(F) green-FS *In DP, multiple items show concord*
'the green house'

b. kiatu *ch*angu *ki*dogo [Swahili]
7shoe 7my 7small *Multiple items show concord, as in Romance*
'my small shoe'

I also argued in Carstens (2001) that the Agree relation underlying IE SA can extend to iterating SA in Bantu Compound Tenses (see (3a-c)) under the assumption that only certain heads value/deletion-mark a DP's Case feature in the Agree relation.

But this leaves us with a theory too unconstrained to have anything to say about the absence of multiple SA in IE. Chomsky's approach correctly rules it out, but under-generates by ruling out Bantu multiple SA and concord processes as well.

How can comparative grammar explain the distribution of multiple agreement? I propose that both iterating concord and Bantu's multiple SA are possible because they include the feature of grammatical gender (and this in turn is determined by hierarchical syntactic relations; see section 5). The independence of Romance past participle agreement (PPA) from Case-valuation is also due to its inclusion of gender.

Recall that SA in Bantu exhibits the features [person, number, gender] (i.e. person and noun class, see (30) and (31)).

(30) a. Mtoto *a*-na-elekea mji-ni. [Swahili]
1child 1SA-PRES-head town-LOC *SA contrast in gender*
'The child is heading towards town.'

b. Gari *li*-na-elekea mji-ni.
5car 5SA-PRES-head town-LOC
'The car is heading towards town.'

(31) a. *pro Ni*-na-elekea mji-ni. [Swahili]
IS-PRES-head town-LOC *SA person & number contrast*
'I'm heading towards town.'

b. *pro M*-na-elekea mji-ni.
IIPL-PRES-head town- LOC
'You guys are heading towards town.'

And we have seen that SA is not restricted to T as it is in IE ((3), repeated below).

(3) a. *Khu*-b-ere *khu*-irukha. [Lusaamia]
IIPLSA-be-PST IIPLSA-run Iterating SA in person and number
'We were running.'

b. Juma *a*-li-kuwa *a*-me-pika chakula. [Swahili]
Juma 1SA-PST-be 1SA-PERF-cook 7food Iterating SA in gender and number
'Juma had cooked food.'

c. Nzogu *zí*-kili *z*-á-twag-a maswá. [Kilega]
10elephant 10SA-be.still 10SA-ASP-stampede-FV 6farm
'The elephants are still stampeding over the farms.'

d. The elephant has been/*s stampeding/*s.

Putting together the evidence of concord, Romance PPA, Bantu multiple SA and *wh*-agreement ((4) and (10b)), a very interesting generalization emerges which I state in (32):

(32) **Case Independence of Gender Agreement (CIGA)**: Agreement that includes grammatical gender features is not restricted to contexts where Case is valued.

This makes perfect sense if gender is uninterpretable. Recall (26) from section 3:

(26) The grammatical gender of nouns is a valued, uninterpretable feature.

We have noted that in the Minimalist theory of Chomsky (2001), a licit goal in Agree must have an activity feature (see 2, repeated below).

(2) The Activity Requirement: each participant in an Agree relation must have an unchecked uninterpretable feature.

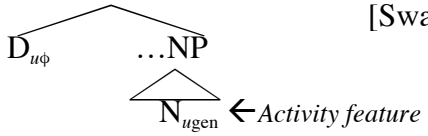
The combination of (26) and (2) predict CIGA, since nominal gender suffices to make its bearer meet the Activity Requirement.

4.2 Gender and Hyperagreement

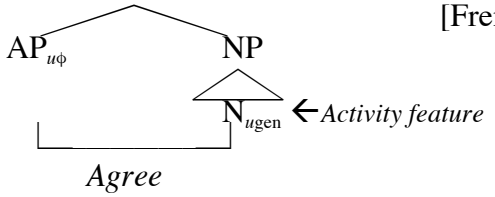
It follows from CIGA that the Activity Requirement is met by any noun bearing a grammatical gender feature. Hence the analysis of an instance of concord between a

demonstrative and N (see (33)) or between an AP and N (see (34)) can be unified completely with the treatment of clause-level agreement like SA (see Carstens 2000; 2001 for arguments that concord should be analyzed in terms of Agree).[7]

(33) a. hi*ki* kitabu [Swahili]
7this 7book
'this book'

b. 

(34) a. petit*e* fille [French]
little.F girl(F)
'little girl'

b. 

How, though, to account for the fact that multiple items within DP can bear concord with a single noun as in (29)? A DP's Case feature seems generally to make it active in one Agree relation only, hence the requirement in (2) that the relevant feature be "unchecked". In the spirit of Chomsky (2000, 2001) I propose (35) as a provisional account (to be developed further in section 7, and see also Carstens to appear).

(35) **Goal Deactivation Principle** (preliminary version)**:** Deactivation iff valuation in the Agree relation.

Now let us see how this approach extends to multiple SA in Bantu CTs. SA includes gender features in Bantu, unlike in IE Romance languages with grammatical gender. I assume that this is not accidental; rather, the features generally reflected in agreement on a given probe indicate what features the probe has access to (see (36) and discussion in section 5).

(36) **Agree (Max):** Each head agrees in all available features.

Under the conclusions of this section, the inclusion of gender paves the way for multiple SA. The gender component of noun class gives a Bantu DP an uninterpretable, intrinsically valued feature (= uGen in (37)). Agree relations can take this as goal but

[7] Section 5.2 argues that person is a feature of D; hence no category internal to DP can Agree with it. I do not directly address concord in number here, but I assume it is a "free rider" in Agree relations taking gender as the active goal feature.

cannot "deactivate" it. Therefore, after an aspectual head (Asp) agrees with a subject, T (and any additional Asps) can still take the subject as goal (on this Spec-to-Spec approach to agreement in Bantu compound tenses see also Carstens 2001, 2005).

(37) a. $[_{TP}\ T_{u\phi}\ [_{AspP}\ Asp\ _{u\phi}\ [_{vP}\ SU_{uGen}\ V{+}v\ [_{VP}\ t_V]]]]$
Agree #1

b. $[_{TP}\ T_{u\phi}\ [_{AspP}\ SU_{uGen}\ Asp_{\#\phi}\ [_{vP}\ <SU>\ V{+}v\ [_{VP}\ t_V]]]$
Agree #2

c. $[_{TP}\ SU_{uGen}\ T_{\#\phi}\ [_{AspP}\ <SU>\ Asp_{\#\phi}\ [_{vP}\ <SU>\ V{+}v\ [_{VP}\ t_V]]]$

4.3 Agreement with operators

Recall that A' operators control agreement in the left edge of many Bantu languages (see (4), repeated below). Carstens (2005) argues that *u*φ of C probes downwards, taking the operator as goal and raising it to Spec, CP.

(4) a. Bikí *bi-b-*éte bá-ku-lyá? [Kilega]
8what 8WHAGR-2SA-ASP1 2SA-ASP2-eat
'What are they eating?'

b. Emikeeka abawala *gye-ba-*a-luka te-gi-gasa. [Luganda]
4mat 2girl 4WHAGR-2SA-PST-plait NEG-4SA-be.of.use
'The mats that the girls plaited aren't suitable.'

c. Ekihi *ky*o Kambale *a-*langira. [Kinande]
7what 7WHAGR-C Kambale 1SA-saw
'What did Kambale see?'

These facts reinforce the findings of previous sections: they argue in favor of (36), the principle adding agreement wherever it can be valued (repeated below); and they confirm CIGA ((32), repeated below).

(36) **Agree (Max):** A head agrees in all available features.

(32) **Case Independence of Gender Agreement (CIGA)**: Agreement that includes grammatical gender features is not restricted to contexts where Case is valued.

An additional point of interest in connection with the facts in (4) is that they are not at all consistent with the claim in Chomsky (2007, 2008) and Richards (2007) that uninterpretable probe features must originate on phase heads C and *v* and be passed down

into their complements so they can be deleted in the domain where they are valued. Hence for Chomsky and Richards SA is necessarily the ϕ-features of C, passed down to T. The co-occurrence of SA and operator agreement casts doubt on this proposal. Taken as a whole the Bantu facts, particularly those of nominal gender, suggest that while uninterpretable features must obtain values for spelling out in the phonological component, they do not have to be deleted at all. I return to this briefly in section 7; and see Carstens (2010) for further development of these points.

5 Connecting DP syntax and clausal agreement

5.1 Introduction

An important question for parametric syntax arises as to why it is that SA can include gender in Bantu, giving rise to the consequences that I have proposed. In the Romance languages, which also have grammatical gender, SA includes only person and number features, and cannot iterate. Why should Bantu uϕ probes on T and Asp "see" gender while their Romance counterparts cannot? In terms of (36), why is nominal gender an available feature in Bantu clause level agreement processes?

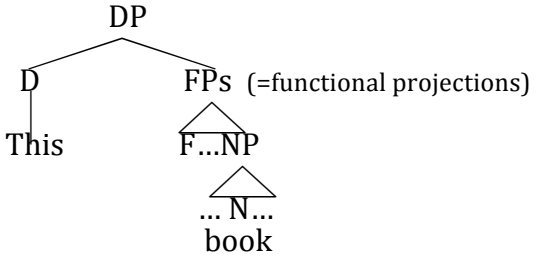
I claim that the answer to this question lies in the internal syntax of DPs. In the next few subsections I establish the loci of the intrinsic ϕ-features that agreement can in principle reflect. I argue that only the person feature is intrinsic to DP, because its locus is D. Gender in contrast is a lexical property of nouns, as we have already seen. This means that person intervenes in any Agree relation between nominal gender and a probe outside DP. Gender is therefore inaccessible to clause-level probes unless they are insensitive to person, as are Romance participles. In Bantu, N-to-D adjunction neutralizes this effect, making nominal gender consistently accessible to outside probes. To complete the picture I argue that because interpretable number is quantificational, it always raises to take scope throughout the DP. This makes it broadly available in agreement. The ubiquity of number agreement and the lexical insensitivity of participles to person features have

heretofore obscured the systematic role of locality in determining the accessibility of the intrinsic ϕ-features to clause-level agreement probes.

5.2 DP and its [person] feature

I adopt the DP hypothesis of Abney (1987). As (38) illustrates, there may be a number of functional categories between the DP and NP layers (an *n*P counterpart to *v*P, for example; and a functional projection connected with number features).

(38) DP hypothesis



I also adopt the widespread assumption that person is a feature of D. This view has its roots in an observation of Postal (1969) that pronouns are always definite. A more recent observation in Baker (2008) provides the basis for a strong empirical argument. Consider the difference between the English quantifier *all*, which takes a full DP as its complement; and quantifiers like *many* or *three*, which appear in the DP's middle field:

(39) a. $[_{QP}$ **all** $[_{DP}$ the boys]]
b. $[_{DP}$ the **three** boys]

Baker (2008) points out that 'all' can agree in person features in some Bantu languages, but the middle field quantifiers cannot. Assuming with Chomsky (2001) and related work that agreement looks downwards for a valuer, an explanation is immediately apparent: person is a feature of D, so only a modifier outside the DP proper can agree in person.

(40) a. sisi *s*-ote; ninyi *ny*-ote [Swahili]
we IPL-all you.PL IIPL-all
'we all; you all'

b. $[_{QP}$ ote $_{u\phi}$ $[_{DP}$ ninyi]] *Q can agree in person because it has a DP complement, since Agree looks downwards for a valuer*
all you. PL

c. $[_{QP}$ ninyi *ny*-ote $_{u\phi}$ $[_{DP}$ <ninyi>]] *Surface order derived by raising*
you.PL IIPL-all

(41) [$_{QP}$ ninyi [$_{DP}$ (watoto) *wa*tatu/**nyi*-tatu]] [Swahili]
You.PL (2child) 2three/IIPL three '*Three' etc. are down inside DP;*
'you three (children)' *too low to agree in person*

5.3 Grammatical gender is a property of nouns

I have already argued in section 3 that grammatical gender must be part of the lexical listings of most nouns. Since there is no way to predict the genders of the Romance or Bantu items below, lexical listing is the only reasonable approach.

(42) a. pomodoro
tomato(MASC)
'tomato'

b. patata [Italian]
potato(FEM)
'potato'

c. kikapu/vikapu
7basket/8basket
'basket/s'

d. ndoo/ndoo [Swahili]
9bucket/10bucket
'bucket/s'

Where gender is determined by a mapping rule (see 24 and 25) it is nonetheless the noun itself that acquires the gender feature, based on its semantics or phonological shape.

5.4 Number is a head in the DP's middle field

Dryer (1989) points out that number is not a nominal affix in every language. In some languages it is an independent word (see 43 from Yapese). Carstens (1991), Ritter (1992), and Bernstein (1991) all argue that interpretable number heads a functional projection in the DPs middle field and, like tense with respect to verbs, number attaches to nouns just in case it requires a morphological host.

(43) a. ea rea kaarroo neey [Yapese]
sing car this (from Dryer 1989; see Carstens
'this car' 1991, Ritter 1992, Bernstein 1991)

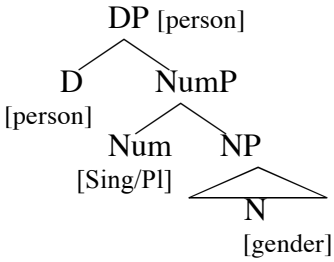
b. ea pi kaarroo neey
plural car this
'these cars'

5.5 Mapping the results

Putting together the conclusions of the preceding sections we arrive upon the representation in (44), and this in turn leads to a surprising prediction. Minimalism does not provide any kind of percolation mechanism, so we predict only [person] to be a feature of the whole DP, since D determines the DP's label. We should expect the

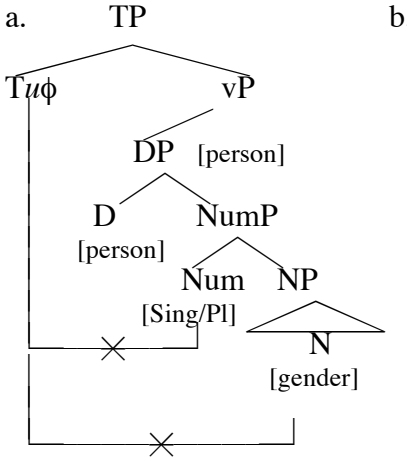
remaining two ϕ-features to be unavailable to value agreement on clause-level probes unless they are raised to D by DP-internal movement processes.

(44)

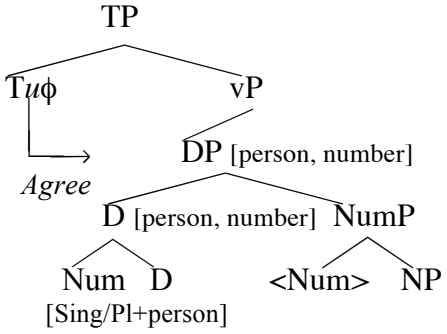


The widespread inclusion of number features in clausal agreement is apparent evidence against this view. But number is quantificational, and quantifier raising is a well-attested phenomenon in grammar. It is accordingly reasonable to hypothesize that if number features are consistently available to probes outside DP, this could be due to QR of the number feature to take scope over the DP that contains it. Anti-locality considerations rule out movement of the whole NumP to Spec, DP (see Grohman 2000, Pesetsky and Torrego 2001 and Matushansky 2006 for relevant locality proposals); so I propose that singular or plural features raise to D in a featural version of QR. This makes number features systematically available, despite their base position in the DP's middle field:

(45) a.



b.



Locality predicts agreement only in person but in a featural instance of QR, Num always raises (see (45b)), making number agreement widely available.

Nominal gender, on the other hand, should not be expected to be accessible to any probe outside DP unless N systematically adjoins to D in a language.[8] I propose that this is precisely what happens in Bantu.

Bantu and Romance languages differ in that Bantu nouns are systematically left-peripheral in DP while Romance nouns generally surface in the DP's middle field. I argue in Carstens (1991) that Bantu N raises to D.[9] Romance N, on the other hand, surfaces in a mid-level functional projection (represented FP in (46) and (47); and see Cinque 1994).[10]

(46) a. nyumba yangu nzuri [Swahili; Carstens 1991, 2008]
house my nice
'my nice house'

b. $[_{DP}$ nyumba+D $[_{FP}$ yangu t_F $[_{NP}$ nzuri $[_{NP}$ t_N]]]]

(47) a. la mia casa [Italian; see Cinque 1994]
the my house
'my house'

b. $[_{DP}$ la $[_{FP}$ mia casa $[_{NP}$ t_N]]]

I claim that as a consequence of systematic N-to-D adjunction, *u*ϕ of Bantu T can and must be valued in all three ϕ-features: gender, number, and person.[11]

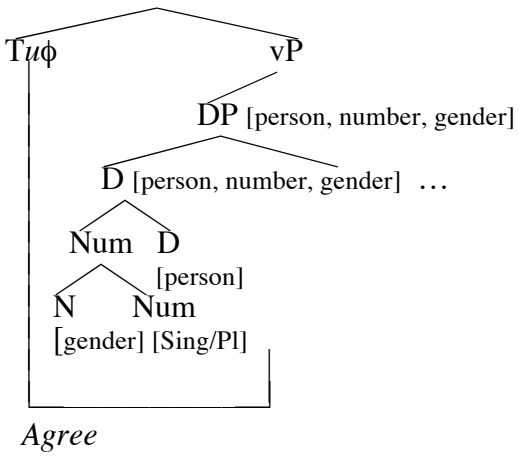
[8] As noted in the introduction, past participles are generally insensitive to [person] as a lexical property. For this reason they can "see" across person to the gender feature in the Romance DP's middle field.

[9] I adopt the view of Matushansky (2006) that the effects of head movement derive from movement to Spec followed by morphological amalgamation.

[10] Languages in which N only sometimes (but not always) raises do not include grammatical gender in SA, or have any alternations in agreement paradigms that I know of (see for example Longobardi's 1994 argument that only proper names raise to D in Italian). This suggests that wherever possible, a kind of morphological parsimony favors a one-time choice of agreement paradigms reflecting features that can consistently be valued. For more on Italian proper names see section 6.4.

[11] Semitic nouns, like those of Bantu, surface left-peripherally in DP. Semitic SA generally includes gender features and iterates in Compound Tenses, providing striking confirmation for the approach I am advocating. Despite some issues connected with mirror image modifier order and prenominal quantifiers, I propose that there is morphological amalgamation of N with D in Semitic (Ritter 1992, Fassi Fehri 1993; see Shlonsky 2004 Cinque 2005 for an NP-movement approach to word order in DPs, and Abels and Neeleman 2006 for counter-arguments). I assume Hyperactivity effects are absent in Semitic for Case-theoretic reasons. See 6.1 and 6.3 for arguments that there is no Case in Bantu, and 6.4 for a Case-theoretic account of the absence of Hyperactivity when Italian proper names move to D. The analysis presented there extends to Semitic more generally, assuming Semitic N adjoins to D but as in Italian there is abstract Case.

(48) *Bantu N-adjunction to D leads to SA in gender*



It is thus predictable from DP syntax what features are available to undifferentiated *u*ϕ probes and, since gender can satisfy the Activity requirement multiple times, we can predict from its availability whether agreement will iterate or not. This is precisely the kind of explanatory and predictive power that syntactic theory seeks to achieve.

6 Deriving Hyperactivity

6.1 Subject-Object Reversal

As we have seen, the combination of N-to-D adjunction and grammatical gender gives Bantu DPs an Activity feature that lasts through the derivation, surviving any Agree relations it enters. Bantu agreement therefore is not restricted to relations that value Case (CIGA). I claim here that this independence makes possible the Subject-Object Reversal construction in (8 and 11, repeated below; see 2.2.1 for arguments from Ndayiragije 1999 and Kinyalolo 1991 that the logical object is in Spec, TP; Kinyalolo 1991, Demuth and Harford 1999, Carstens 2005 for arguments that the subject is in its base position).[12]

(11) Maku ta-*má*-ku-sol-ág-á mutu wéneéné. [Kilega]
6beer NEG-6SA-PROG-drink-HAB-FV 1person 1alone
'No one usually drinks beer alone.'
[Lit: *Beer doesn't usually drink a person alone]

In IE, a DP object of V cannot be successfully probed by T because the sole Activity feature in A-relations is the DP's *u*Case. For the direct object, the closest source of Case

[12] The location of Kirundi subjects in OVS constructions seems different; see Ndayiragije 1999 for details.

valuation is the probe *v** of transitive clauses. Once *v** has probed the object DP and valued its Case, the object is inactive. Only in an unaccusative or passive clause where *v** is lacking can T agree with the object and raise it to Spec, TP (see (49a,b) vs. (49c)).

(49) a. They cooked *t* (i.e. the potatoes).
b. They were cooked *t*.
c. *[$_{TP}$ They [$_{v*P}$ Mary cooked *t*]](to mean 'Mary cooked them')

In contrast we can see from (11) that Bantu direct objects of transitive verbs are active in relations with T, as my analysis of nominal gender as an Activity feature predicts.[13]

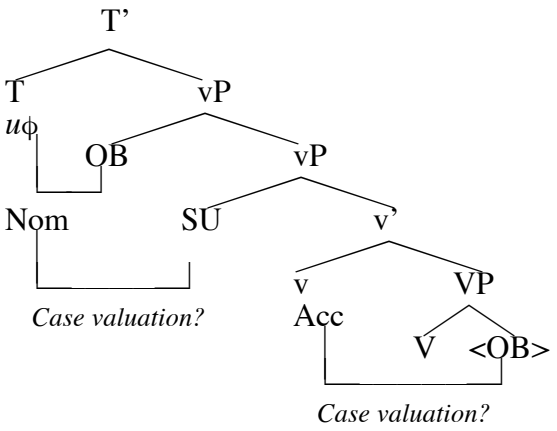
Based on what we have established so far, a reasonable assumption is that agreement and Case are only circumstantially related in familiar languages because Case is the sole Activity feature. In Bantu, where a DP's gender feature serves this purpose, Case valuation and agreement can be decoupled. Thus one could assume that in (11), *v** values accusative on the object and T values nominative on the logical subject independently of the Agree relations that give rise to agreement (see Carstens 2005). This approach rests on the traditional view that certain heads are intrinsically specified with the "Case-assigning" property (as I argued in Carstens 2001, contra Chomsky 2000). Thus the Case feature can probe, initiating an Agree relation that values a DP's *u*Case feature; meanwhile nominal gender serves as the goal feature for an agreement probe.

I illustrate a hypothetical derivation of (11) under these assumptions in (50). For expository purposes I represent the Case-valuing property of *v** as Acc and that of T as Nom. *v** probes the object *maku* - 'beer' and values its *u*Case as accusative. Following Chomsky (2008) each phase head (T or *v**) has Edge (= EPP) features that can raise a goal to Spec, *v*P. *v**'s Edge feature raises *maku* to a Spec, *v*P where it is local to T. The two *u*Fs of T, *u*ϕ and the nominative Case-checking property, probe independently: T's

[13] Working in the framework of slightly different assumptions, Ndayiragije (1999) proposes that only probe features require checking. I make the now-standard assumption that all features must be valued before Transfer of the syntactic object to the interfaces.

*u*ϕ Agrees with and raises the logical object; its Case-valuing property then values *u*Case of the logical subject.

(50)



Diercks (to appear) presents a very interesting alternative approach. He proposes that Case is parameterized, and that there is no abstract Case in Bantu at all. His arguments include: (i) the central role I have proposed for gender in Bantu Activity; (ii) the lack of evidence for a relationship between T and the subject in inversion constructions like (11) and (13); (iii) the absence of morphological Case in Bantu; and (iv) the fact that Bantu DPs routinely appear in positions where Case theory predicts that they should be illicit. Diercks's (51) demonstrates this latter point with a DP subject in an infinitive, and (52) with an in situ DP object of a passive verb. In both of these environments it is standardly assumed that Case-valuation is not possible. The sentences are therefore predicted to be ungrammatical, but they are in fact well-formed ((52) from Harford Perez 1985 via Diercks to appear).[14]

(51) I-na-wezakana (*kwa) Maiko ku-m-pig-i-a Tegani simu. [Swahili]
9SA-PRS-possible for Michael INF-1OA-beat-APPL-FV Tegan phone
'It is possible *(for) Michael to call Tegan.'

(52) kw-á-uray-iw-a murúmé né-shumba ku-rukova. [Shona]
17SA-PAST-kill-PASS-FV 1man by-9lion 17-11river
'There was a man killed by a lion at the river.'
[Lit: there was killed a man by a lion at the river]

[14] SA in (52) is with a class 17 'there'-type expletive *pro*, not with the overt locative phrase 'at the river'.

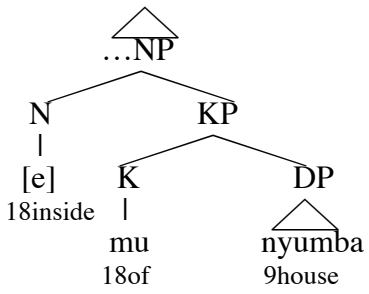
Diercks's reasoning is persuasive, and I will present additional arguments in support of his proposal in sections 6.3 and 7 (see also note 11 on the role of Case in Semitic). I conclude with him that Case is not just independent of agreement in Bantu as proposed in Carstens (2005), Baker (2003), and Henderson (2006a). It is altogether lacking in the Bantu languages consider in this paper.

6.2 Locative inversion constructions

6.2.1 The structure of locatives

Let us turn now to the account of locative inversion and locative agreement. It is clear from their ability to control distinctive agreement that locatives in many Bantu languages are endowed with gender features. Based on an exploration of Chichewa locatives, I argued in Carstens (1997) that in Bantu languages with productive locative agreement there are 3 silent 'place' nouns with locative meanings. In Chichewa these are 'inside', 'surface', and 'vicinity'. There are also overt gender-particular locative markers *pa, ku,* and *mu* preceding locativized nouns, but there is evidence that these are not the nominal component of locative phrases. They fail to meet the two mora minimum word size that lexical categories are subject to; and they don't require 'of' before their complements like nouns do. Assuming instead that they are prepositional Case-markers the result is (53).

(53) [Chichewa; Carstens 1997:362]



'inside the house'

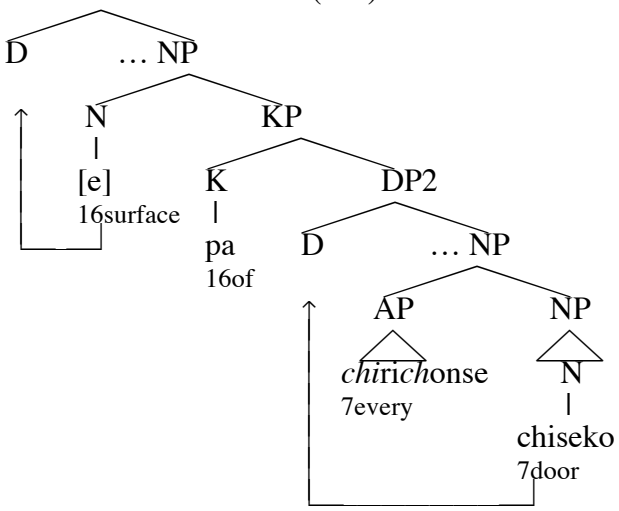
The presence of a nominal head with locative meaning and gender is readily apparent in meaning differences accompanying agreement choice in (54). If the modifier *–ri –onse* – 'every' agrees with the overt noun *chiseko* – 'door', then it is semantically a modifier of 'door'. If, on the other hand, *–ri –onse* – 'every' exhibits locative agreement, it modifies

the null 'place' noun. Carstens (1997) proposes the representations in (55) (not shown here is movement of each locative KP to Spec of DP1, deriving surface word order).

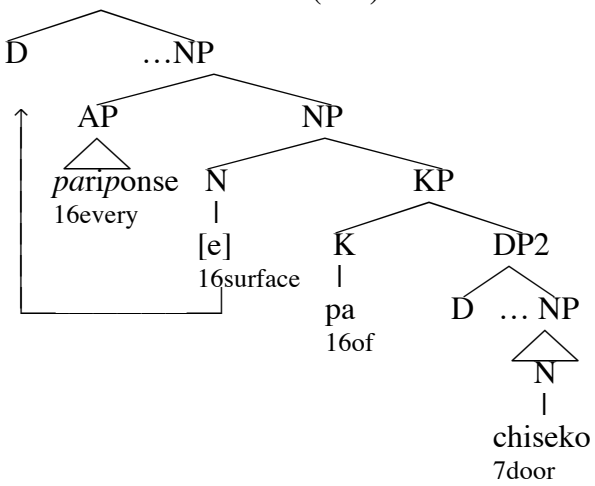
(54) a. Pali nchenche pa-chiseko *ch*iri*ch*onse. [Chichewa]
16SA-be 10fly 16-7door 7every
'There are flies on every door.'

b. Pali nchenche pa-chiseko *pa*ri*p*onse.
16SA-be10fly 16-7door 16every
'There are flies all over the door.' (i.e. on every part)

(55) a. = (54a)



b. = (54b)



Summing up, the existence of locative genders and locative agreement in Bantu is not surprising given the evidence that locatives contain nominals; thus by assumption they are DPs. Locative nouns adjoin to D like other Bantu nouns, in my (1997) analysis. It is

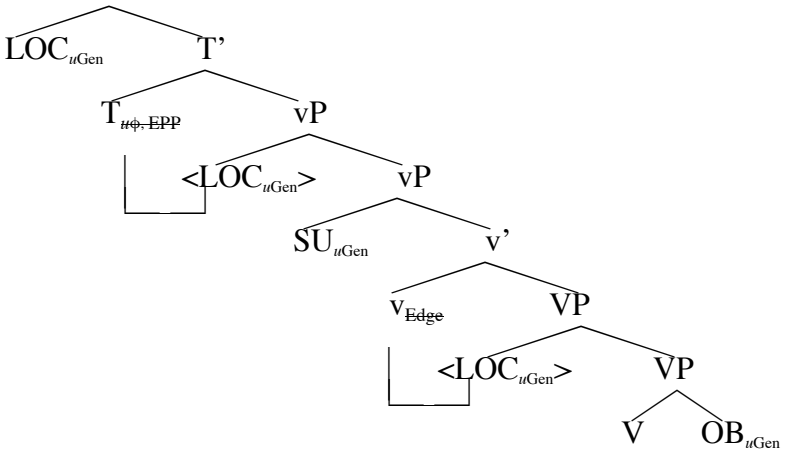
to be expected, then, that locative phrases exhibit Hyperactivity and Hyperagreement just like other Bantu DPs.

6.2.2 Analysis of locative inversion

The analysis of locative inversion constructions follows straightforwardly from the proposals in sections 3-5. In the Kilega (13) (repeated below) the locative DP is likely generated as an adjunct to VP. It is active in A-relations of agreement and movement because of the gender feature of its nominal head, adjoined to D.[15] The edge feature of *v** can raise the locative to a Spec, vP where it is accessible to T. The resulting derivation is illustrated in (56).

(13) Ku-Lúgushwá *kú*-kili *ku*-á-twag-a nzogu maswá. [Kilega]
17- Lúgushwá 17SA-be.still 17SA-A-stampede-FV 10elephant 6farm
'At Lugushwa elephants are still stampeding (over the) farms.'

(56) *Schematic representation of (13); AspP omitted*



6. 3 Hyper-raising

Under the assumptions of the Minimalist program, the DP subject of a tensed clause has its *u*Case feature valued and deleted in an Agree relation with finite T. This deactivates

[15] English locative inversion is notoriously inconclusive in its properties, disallowing A'-movement across it like an operator would, and resisting agreement (see (i)a. vs. (i)b). I assume it is rather different from its Bantu counterpart in ways beyond this paper's scope.

(i) a. *Why did [under the table] lie John?
b. Under the table are/*is two pens.

There is also variation across Bantu languages in whether transitive locative inversions are permitted. This proposal is intended only to describe one necessary condition for its occurrence, not necessarily the only one, and not necessarily a sufficient condition for all languages.

the DP and blocks it from participating in further Agree relations (see (17a), repeated below). Hence subject-to-subject raising is possible only out of infinitival complements like (17b) where, in the absence of finite T, there is no nominative valuation available.

(17) a. * The animals seem [<the animals> are sleeping].
b. The animals seem [<the animals> to be sleeping].

Yet as I noted in 2.3, subject raising out of tensed clauses is attested in many Bantu languages. In (15) and (16) (repeated below), the surface subject of the matrix clause is thematically related only to the lower clause; yet the lower clause is tensed.

(15) Efula yi-bonekhana i-na-kwa muchiri. [Lusaamia]
9rain 9SA-appear 9SA-FUT-fall tomorrow
'It seems that it will rain tomorrow.'
[Lit: rain seems will fall tomorrow. OK to say upon reading the forecast]

(16) Chisaang'i chi-lolekhana chi-kona.
10animal 10SA-seem 10SA-sleep.PRES
'The animals seem to be sleeping.' [Lubukusu]
[OK to say if you're looking for animals and can't find any]

Constructions of this type, referred to in the literature as Hyper-raising, appear to be quite widespread in Bantu. They have been documented for Kikuyu, Shona, and Kirundi (Harford Perez 1985); for Lubukusu (Diercks to appear); and for Zulu (Zeller 2006) (and see Carstens and Diercks to appear for full discussion and analysis of Lubukusu and Lusaamia Hyper-raising).

If unvalued Case were the (sole) Activity feature in Bantu, Hyper-raising would be completely unexpected. But the constructions fits rather neatly into the pattern we have already observed: Bantu DPs are Hyperactive, owing to their gender features. As the embedded clauses of (15) and (16) contain no complementizers I assume with Carstens and Diercks (to appear) that they are TPs.[16] *U*φ of the embedded T probes the subject DP and is valued. An EPP feature raises the subject DP to embedded Spec, TP. Then the

[16] Recall that C and T can agree with different expressions in Bantu (see (4)), unlike in English. The two heads thus have independent features. A bare TP need not be an uninflected infinitive as Chomsky (2007, 2008) has argued to be the case in English.

process repeats: T of the higher clause probes this same DP, agrees with it and raises it to the surface subject position (see (57)).

(57) $[_{TP}\ DP_{\varphi}\ T_{\text{~~}u\varphi;\ \text{~~}EPP}\ [_{vP}\ [_{VP}\ \text{seem}\ [_{TP} < DP_{\varphi} > T_{\text{~~}u\varphi;\ \text{~~}EPP}\ [_{vP} < DP_{\varphi} > [_{VP}\ V\ldots]]]]]]$

There can be no comparable movement of this kind out of an English tensed clause because the relation that values *u*φ of the embedded T simultaneously values the embedded subject DP's *u*Case feature, and thereby deactivates it. Since nominal gender is not valued and deactivated by Agree, it continues to be active after valuing *u*φ of the embedded T.

As Diercks (to appear) and Carstens and Diercks (to appear) point out, there remains a potential problem connected with Hyper-raising under the standard assumption that abstract Case is universal. If we assume that Bantu languages have Case, the subject DP of a hyper-raising construction would have its Case feature valued twice: once in the embedded clause and once in the matrix clause. This problem disappears under Diercks' proposal that abstract Case is altogether lacking in Bantu, and Hyper-raising therefore constitutes evidence for his proposal.

6.4 Discussion: Gender, Case, and Italian Proper Names

We saw in sections 4 and 5 that Bantu nouns have the gender component of noun class to make them active in Agree relations. This gives rise to multiple instances of DP-internal concord, which is found in all languages with grammatical gender, to the best of my knowledge. Because Bantu also has N-to-D adjunction, nominal gender is inherited by D(P) and included in the features of SA. And because a noun's gender enters the syntax with a value, Agree relations do not value and deactivate it. Some morpho-syntactic consequences are multiple SA and agreement on C in the φ-features of operators.

In section 6 I have argued that these same factors enable objects and locative DPs to enter A-relations with Bantu T. Objects and locatives can accordingly value T's *u*ϕ and raise to Spec, TP. The accessibility of gender and its exemption from deactivation also permit Hyper-raising of subjects out of tensed embedded clauses. But as I noted in

section 6.3, Hyper-raising ought to be ungrammatical nonetheless if abstract Case were present in Bantu. This is because the raised subject's Case feature would be valued more than once. Diercks (to appear) and Carstens and Diercks (to appear) therefore argue that hyper-raising supports Diercks's proposal that Case is lacking in Bantu.

Diercks's proposal of parameterized Case also provides a solution to a puzzle that arises in connection with Italian proper names. Longobardi (1994) argues that proper names raise to D in Italian when D is phonologically empty ((58) and (58') adapted from Longobardi 1994:623).

(58) a. il mio Gianni
the my Gianni
'my Gianni'

b. Gianni mio
Gianni my
'my Gianni'

c. *Mio (il) Gianni

(58') a. [$_{DP}$ il [$_{NP}$ mio Gianni]]

b. [$_{DP}$ Gianni [$_{NP}$ mio <Gianni>]]

I mentioned in footnote 10 that languages wherein N only sometimes raises to D do not exhibit separate SA paradigms. There does not seem to exist one paradigm used when N is adjoined to D and another when N does not raise, in such languages. It seems reasonable to conclude that a simpler system is favored, wherein the paradigms for agreement consistently include just those features which can reliably be valued.

This account does not, however, explain the failure of proper names to exhibit Hyperactivity when they have raised to D in Italian. The problem arises because I have argued that Hyperactivity follows whenever N's gender feature is accessible to clause-level probes like T, since N's gender is never deactivated. Under this assumption, Bantu-style inversion constructions could reasonably be expected to occur in Italian as long as the DP involved is a proper name adjoined to D.[17] Yet this does not happen.[18]

[17] My thanks to Jeroen van Craenenbroeck for pointing this out to me, and for making me aware that the same issue potentially arises in connection with Romance pronouns under the fairly common assumption that pronouns occupy D. For expository convenience I focus here on proper names; the solution extends to pronouns. Note also that the question arises for Semitic DPs generally (see footnote 11). The same solution applies.

[18] In fact, Burzio (1986) conjectures that a natural language would not include a process that interchanges the subject and object.

I propose that the presence of abstract Case in Italian is responsible for the absence of Hyperactivity for Italian names. I have adopted the view that only certain heads, T and *v**, can value Case. I also adopt the common assumption that in languages with Case, its valuation is tied to valuation of agreement. Now, suppose Italian T were to enter into an Agree relation with a non-subject DP such as a direct object proper name or locative place name, agreeing with this DP and raising it as in Bantu inversion constructions. In this circumstance T's capacity to value *u*Case would be expended on the relevant DP. The logical subject would then fail to obtain a Case value, and the derivation would crash. If the non-subject DP that T Agrees with happened to be the direct object (analogously to a Bantu Subject Object Reversal Construction), an additional problem arises in that it would acquire two Case values for a single formal feature: first accusative from *v** and subsequently nominative from T. This by assumption is also illicit, and would constitute an additional reason for the derivation to crash.

7. Some final remarks, questions, and answers

Cross-linguistic variation in agreement phenomena strongly indicates that agreement and A-movement are not universally linked to Case (see Baker 2003, Carstens 2000, 2001, Diercks to appear, among others). But delinking these processes from Case leads to over-generation in languages like English where they generally coincide. In this paper I have argued that the problem is resolved if we take seriously the Activity Condition, requiring that a licit goal have an unchecked uninterpretable feature. Grammatical gender provides an alternative to Case for satisfying this requirement, and thus frees up agreement and movement where the gender feature is accessible (and where the demands of Case valuation do not constrain Agree relations). Adjunction of N to D makes gender accessible to clause-level probes beyond the few that are insensitive to the intervening person feature of D, such as Romance past participles.

But as Carstens (2010) notes, this story is not yet able to restrict IE SA to a single occurrence on T. If heads agree in as many features as possible (see (36), repeated below) and valuation in Agree is the crucial factor in rendering a goal inactive, then multiple aspectual heads in IE languages could in principle licitly agree with the subject. Until T values the subject DP's *u*Case feature, the DP should be an active goal. Instead, it is generally true that IE SA appears only on the verbal head most local to T (see (59)).

(36) **Agree (Max):** Each head agrees in all available features.

(59) a. John ha*s* been sleeping.
b. *John have *is* sleeping.
c. *John ha*s is* sleeping.

To account for this crucial difference between Bantu and Indo-European SA I propose supplementing the Goal Deactivation Principle in (35) with (60) (see also Carstens to appear).

(35) **Goal Deactivation Principle** (preliminary version)**:** Deactivation iff valuation in the Agree relation.

(60) **The Strong Activity Condition:** In a licit Agree relation, probe and goal have matching uninterpretable features, one of which can value the other.

(60) disallows a situation wherein an English aspectual head below T has *u*ϕ that Agrees with a DP whose sole Activity feature is unchecked Case. A *u*Case feature is uninterpretable, but it does not match the *u*F of the probe, which is *u*ϕ.

The Strong Activity Condition in (60) also prohibits an Agree relation in which the nominative checking feature of T initiates an Agree relation with a goal having ϕ-features but lacking a *u*Case feature. Yet, like the Goal Deactivation Principle in (35), (60) is permissive enough to allow multiple Agree relations based on gender, as in DP-internal concord and Bantu CTs. This is as it should be.

These proposals extend the ability of syntactic theory to explain broad patterns of agreement and movement in Bantu languages. They also raise some interesting and significant theoretical questions. As I have noted before, when Agree relations value the

Case of a DP, it ceases to be Active. The examples in (61) and their schematic counterparts in (62) illustrate this with an English pronominal DP subject originating in an embedded clause. A Case value is unavailable for the subject if the containing clause is an infinitive, and this yields ungrammaticality (see (61a) and (62a)) unless the subject moves from the infinitive to the tensed matrix clause ((61b) and (62b)). When the source clause of the subject is tensed, a well-formed result is obtained because the subject's Case can be valued locally ((61c) and (62c)). Movement into the higher clause is then impossible (see (61d) and (62d)). Chomsky (2001:6) writes, "Once the Case value is determined, N no longer enters into agreement relations and is 'frozen in place.' "

(61) a. *It seems he to have left.
b. He seems __to have left.
c. It seems that he has left.
d. *He seems __has left.

(62) a. *It seems [$3^{rd}S_{u\text{Case}}$ to have left]
b. [$He_{\sout{NOM}}$ $T_{\sout{3S}}$ seem*s* [<$3^{rd}S_{u\text{Case}}$> to have left]]
c. It seems [that $3S_{u\text{Case}}$ $T_{u\phi}$ have left] → It seems [that $he_{\sout{NOM}}$ $T_{\sout{3S}}$ ha*s* left]
d. *[$He_{\sout{NOM,, NOM}}$ $T_{\sout{3S}}$ seems [<$He_{\sout{NOM}}$> $T_{\sout{3S}}$ ha*s* left]]

Under the assumptions of Chomsky (2001), the 'frozen in place' effect (goal deactivation) indicates deletion-marking. Deletion of uninterpretable features is taken to be necessary to prevent them from reaching the Conceptual-Intentional (C-I) interface. Chomsky (2007 and 2008) builds upon this approach, arguing in some detail that uninterpretable features trigger obligatory Transfer to the interfaces within the domain where they obtain their values (in effect, simultaneously with valuation). Otherwise they will be indistinguishable from interpretable features, and this will cause them to be preserved, leading to a C-I Interface crash. The valuation/transfer domain must be the complement to the phase head C or *v** where the uninterpretable feature is introduced (see Chomsky 2007, 2008, and Richards 2007 on the motivation for this).[19]

[19] The approach is generally referred to as Feature Inheritance after the mechanism of passing down features from a phase head to the head of its complement. But whether or not Feature Inheritance exists in (some) language(s) is a question logically independent of the rationale for it that I consider and reject here.

The reusability of nominal gender as an Activity feature conflicts with both Chomsky's (2001) and (2007, 2008) approaches, suggesting instead that an uninterpretable feature can in principle licitly persist throughout the full length of a syntactic derivation.

Several questions arise. Why do deactivation effects accompany Case-valuation? Why aren't nominal expressions "frozen in place" after participating in one instance of gender agreement? What is the explanation for deactivation effects?

Epstein, Kitahara, and Seely (2010) point out that a simple utterance like *Whom do they like?* is incompatible with the proposals in Chomsky (2007, 2008). The sentence involves uninterpretable features of Case and agreement on *whom* and *like* respectively. These *u*Fs obtain their values within VP, the complement to phase head *v**. The lexical items that bear them subsequently move out of VP to phase edge positions (for *like,* adjoined to *v**; for *whom*, Spec, *v*P and eventually Spec, CP). The relevant *u*Fs accordingly cannot undergo Transfer in the domain where they were valued. By the logic of the proposals in Chomsky (2007, 2008), ill-formedness should result, contrary to fact.

Epstein, Kitahara, and Seely propose instead that the status of *u*Fs as uninterpretable is not lost upon valuation. They argue convincingly that uninterpretable features remain recognizable as such even at the C-I interface and are accordingly licit there after valuation. The C-I interface simply ignores them, attending only to interpretable features – the ones that it can use.

The facts of nominal gender provide strong support for this proposal, and I accordingly adopt it. As my schematic representation in (62d) suggests (and see Carstens to appear), I take goal deactivation effects for Case-valued DPs to be the manifestation of a PF legibility issue that arises if a single formal feature acquires multiple values, such as *u*Case = <nom, acc> or even *u*Case = <nom, nom> (on the former see discussion of (49) in 6.1; on latter, see the discussion of hyper-raising in section 6.3). I therefore restate the Goal Deactivation Principle as (35'), assuming that it is simply impossible for multiple

values of a single feature to be implemented phonologically. This issue can never arise for nominal gender, an Activity feature that is constant through multiple Agree relations because it is not valued by Agree.

(35') **Goal Deactivation Principle** (final version)**:** *u*Fs that acquire their values through Agree are deactivated, because only a single value for a given formal feature can be pronounced.

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