Chapter 5

Flexibility in symmetry: An implicational relation in Bantu double object constructions

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This paper presents new data from Bantu languages, from which a hitherto unnoticed typological pattern emerges: A) language-internally, causative, applicative and lexical ('give') ditransitives can differ with respect to symmetry; B) crosslinguistically, they are in an implicational relationship: if a language is symmetrical for one type of predicate, it is symmetrical for the predicate types to its right as well:

causative > applicative > lexical ditransitive

This can be accounted for if symmetry is due to low functional heads being flexible to license an argument in either their complement or their specifier (Haddican & Holmberg 2012; 2015). This flexibility is argued to be a sensitivity to topicality. The implicational relation can then be seen as a requirement for lower functional heads to have the same sensitivity: if Caus can license its specifier, then HAppl and LAppl should also be able to do so.

1 Introduction

Baker et al. (2012: 54) note that "for more than thirty years, symmetrical and asymmetrical object constructions have been a classic topic in the syntax of Bantu languages and beyond". Bresnan & Moshi (1990) divided Bantu languages into two classes -symmetrical and asymmetrical- based on the behaviour of objects in ditransitives: languages are taken to be symmetrical if both objects of a ditransitive verb behave alike with respect to passivisation and pronominalisation (see Ngonyani 1996; Buell 2005 for further tests). In Zulu, for example, either

Jenneke van der Wal. 2017. Flexibility in symmetry: An implicational relation in Bantu double object constructions. In Michelle Sheehan & Laura R. Bailey (eds.), *Order and structure in syntax II: Subjecthood and argument structure*, 115–152. Berlin: Language Science Press. DOI:10.5281/zenodo.1116761

object can be object-marked on the verb (1), and either object can be the subject of a passive verb (2).

Zulu (Adams 2010: 11)

(1) a. *U-mama u-nik-e aba-ntwana in-cwadi.*
1a-mama 1SM-give-PFV 2-children 9-book
'Mama gave the children a book.'

b. *U-mama u-**ba**-nik-e in-cwadi (aba-ntwana).*
1a-mama 1SM-**2OM**-give-PFV 9-book 2-children
'Mama gave them a book (the children).'

c. *U-mama u-**yi**-nik-e aba-ntwana (in-cwadi).*
1a-mama 1SM-**9OM**-give-PFV 2-children 9-book
'Mama gave the children it (a book).'

(2) a. *In-cwadi y-a-fund-el-w-a aba-ntwana.*
9-book 9SM-REM.PST-read-APPL-PASS-FV 2-children
'The book was read (for) the children.'

b. *Aba-ntwana b-a-fund-el-w-a in-cwadi.*
2-children 2SM-REM.PST-read-APPL-PASS-FV 9-book
'The children were read a book.'

However, it has become clear that the situation is not that black-and-white, with 'symmetrical languages' showing asymmetry in some part of the language (Schadeberg 1995, cf. Rugemalira 1991; Thwala 2006). It is already known that this asymmetry can be found in a number of ways. First, languages can be symmetrical only for a subpart of the tests (e.g. for object marking but not word order; Ngonyani 1996; Moshi 1998; Riedel 2009). Second, languages can vary in symmetry for different combinations of thematic roles (e.g. instruments versus benefactives; Baker 1988; Marantz 1993; Alsina & Mchombo 1993; Simango 1995; Ngonyani 1996; 1998; Zeller & Ngoboka 2006; Jerro 2015 and many others). Third, we are starting to see that combinations of syntactic operations (e.g. relativisation, passivisation, object marking) may also show asymmetry in otherwise symmetrical languages (Adams 2010; Zeller 2014; Holmberg et al. 2015), see also §4.2.

This paper presents new data from Bantu languages, exhibiting a fourth way in which symmetrical languages can show asymmetry. From this, a hitherto unnoticed typological pattern emerges: A) language-internally, causative, applicative

and lexical ('give') ditransitives can differ with respect to symmetry; B) crosslinguistically, they are in an implicational relationship: if a language is symmetrical for one type of predicate, it is symmetrical for the predicate types to its right in (3) as well.

(3) *causative > applicative > lexical ditransitive > (more restricted)*
type 1 type 2 type 3 type 4

Having discovered this pattern, we want to understand and explain it, which is where Haddican & Holmberg's (2012; 2015) analysis of symmetry proves useful. In §2, I first show and illustrate the discovered pattern in different languages. In §3 I propose a theoretical analysis for asymmetry and the implicational relation of symmetry, while §4 presents potential trouble. Note that in the current paper I restrict myself to the thematic roles of Causee, Benefactive, Recipient and Theme; see the conclusion in §5 for some discussion on other roles.

2 Not all ditransitives are equal

Apart from lexical ditransitive predicates such as 'give' or 'teach', Bantu languages can productively create ditransitive predicates by increasing the valency of verbs with applicative and causative derivations (marked morphologically on the verb), as shown in (4) and (5), respectively.

Makhuwa (van der Wal 2009: 71 and database)

(4) a. *Amína o-n-rúwá eshimá.*
1.Amina 1SM-PRES.CJ-stir 9.shima
'Amina prepares shima.'

b. *Amína o-n-aá-rúw-**él'** éshimá anámwáne.*
1.Amina 1SM-PRES.CJ-2OM-stir-APPL.FV 9.shima 2.children
'Amina prepares shima for the children.'

(5) a. *Ál' átthw' áálá aa-wárá eshaphéyu.*
2.DEM 2.people 2.DEM 2SM.PERF.DJ-wear 10.hats
'These people wear hats.'

b. *O-ḿ-wár-**íh**-á mwalápw' ááwé ekúwó.*
1SM.PERF.DJ-1OM-wear-CAUS-FV 1.dog 1.POSS.1 9.cloth
'She dressed her dog in a cloth.'

Although the Benefactive (children) and the Causee (dog) fully belong to the argument structure of the verb, just like the Recipient and Theme in a lexical ditransitive such as 'give', not all languages treat the two objects in these three types of ditransitives in the same symmetrical or asymmetrical way. As mentioned, an implicational relationship appears between the symmetrical behaviour of double objects in causatives, applicatives and lexical ditransitives, as in (3) above. The types of symmetry patterns are illustrated for object marking in various languages below; passivisation is in the various languages confirmed or expected to follow the same pattern, but only object marking will be discussed in this paper.

2.1 Type 1: fully symmetrical

On one end of the continuum are languages that behave symmetrically for all three types of ditransitive constructions. Zulu is one such language: both objects behave symmetrically, whether they belong to a lexical ditransitive verb or a derived applicative or causative. This is illustrated for object marking in (6–8) and yields the same results for passivisation. Zulu is thus a language of type 1: symmetrical for all types of verbs.

Zulu (Zeller 2011, see also Zeller 2012)

(6) lexical ditransitive

a. *UJohn u-nik-a abantwana imali.*
1a.John 1SM-give-FV 2.children 9.money
'John is giving the children money.'

b. *UJohn u-**ba**-nik-a imali (abantwana).*
1a.John 1SM-2OM-give-FV 9.money 2.children
'John is giving them money (the children).'

c. *UJohn u-**yi**-nik-a abantwana (imali).*
1a.John 1SM-9OM-give-FV 2.children 9.money
'John is giving it to the children (the money).'

(7) applicative

a. *ULanga u-phek-el-a umama inyama.*
1a.Langa 1SM-cook-APPL-FV 1a.mother 9.meat
'Langa is cooking meat for mother.'

b. *ULanga u-**m**-phek-el-a inyama (umama).*
1a.Langa 1SM-1OM-cook-APPL-FV 9.meat 1a.mother
'Langa is cooking meat for her (mother).'

c. *ULanga u-**yi**-phek-el-a umama (inyama).*
1a.Langa 1SM-9OM-cook-APPL-FV 1.mother 9.meat
'Langa is cooking it for mother (the meat).'

(8) causative

a. *ULanga u-phek-is-a umama ukudla.*
1a.Langa 1SM-cook-CAUS-FV 1a.mother 15.food
'Langa helps/makes mother cook food.'

b. *ULanga u-**m**-phek-is-a ukudla (umama).*
1a.Langa 1SM-1OM-cook-CAUS-FV 15.food 1a.mother
'Langa helps/makes her cook food (mother).'

c. *ULanga u-**ku**-phek-is-a umama (ukudla).*
1a.Langa 1SM-15OM-cook-CAUS-FV 1a.mother 15.food
'Langa makes mother cook it (the food).'

The same full symmetry has been observed in Kimeru (Hodges 1977), Shona (Mugari 2013; Mathangwane & Osam 2006), Lubukusu (Baker et al. 2012), Kinyarwanda (Zeller & Ngoboka 2014; Ngoboka 2005), Kîîtharaka (Muriungi 2008), and Kikuyu (Peter Githinji, personal communication).

2.2 Type 2: only lexical and applicative symmetrical

One step further down the cline are languages of type 2, where objects of applicatives and lexical ditransitives behave symmetrically, but objects of causatives do not. In Southern Sotho, either object of lexical ditransitives and applicatives can be object-marked, as in (9) and (10),[1] whereas with a causative only the Causee can be marked, not the Theme (11).

[1]But see the influence of animacy as pointed out for Sesotho by Morolong & Hyman (1977) and comparatively discussed in Hyman & Duranti (1982).

Southern Sotho

(9) lexical ditransitive (Thabo Ditsele, personal communication)

a. *Ntate o fa bana lijo.*
1.father 1SM give 2.children 5.food
'Father gives the children food.'

b. *Ntate o **ba** fa lijo.*
1.father 1SM 2OM give 5.food
'Father gives them food.'

c. *Ntate o **li** fa bana.*
1.father 1SM 5OM give 2.children
'Father gives it to the children.'

(10) applicative (Machobane 1989: 24)

a. *Banana ba-pheh-el-a ´me nama.*
2.girls 2SM-cook-APPL-FV 1.mother 9.meat
'The girls are cooking meat for my mother.'

b. *Banana ba-**mo**-pheh-el-a nama.*
2.girls 2SM-cook-APPL-FV 9.meat
'The girls are cooking meat for her.'

c. *Banana ba-**e**-pheh-el-a ´me.*
2.girls 2SM-9OM-cook-APPL-FV 1.mother
'The girls are cooking it for my mother.'

(11) causative (Machobane 1989: 31)

a. *Ntate o-bal-is-a bana buka.*
1.father 1SM-read-CAUS-FV 2.children 9.book
'My father makes the children read the book.'

b. *Ntate o-**ba**-bal-is-a buka.*
1.father 1SM-2OM-read-CAUS-FV 9.book
'My father makes them read the book.'

c. * *Ntate o-**e**-bal-is-a bana.*
1.father 1SM-9OM-read-CAUS-FV 2.children
int. 'My father makes the children read it.'

The same pattern is found in Otjiherero, as shown in (12–14):
Otjiherero

(12) lexical ditransitive (Jekura Kavari, personal communication)

a. *Omukazendu ma pe ovazandu ovikurya.*
1.woman PRES 1SM.give 2.boys 8.food
'The woman gives the boys food.'

b. *Omukazendu me **ve** pe ovikurya.*
1.woman PRES.1SM 2OM give 8.food
'The woman gives them food.'

c. *Omukazendu me **vi** pe ovazandu.*
1.woman PRES.1SM 8OM give 2.boys
'The woman gives it to the children.'

(13) applicative (Marten & Kula 2012: 247)

a. *Má-vé **vè** tjáng-ér-é òm-bàpírà.*
PRES-2SM 2OM write-APPL-FV 9-letter
'They are writing them a letter.'

b. *Má-vá **ì** tjáng-ér-é òvà-nâtjé.*
pres-2SM 9OM write-APPL-FV 2-children
'They are writing the children it.'

(14) causative (Jekura Kavari, personal communication)

a. *Ma-ve **ve** tjang-is-a om-bapira.*
PRES-2SM 2OM write-CAUS-FV 9-letter
'They make them write a letter.'

b. * *Ma-ve **i** tjang-is-a ova-natje.*
PRES-2SM 9OM write-CAUS-FV 2-children
'They make the children write it.'

2.3 Type 3: only lexical symmetrical

Type 3 is yet another step down the hierarchy in (3). In KiLuguru, double objects behave symmetrically only for lexical ditransitives (15), but show asymmetries with both applicative and causative predicates (16–17).

KiLuguru (Marten & Ramadhani 2001: 266, 269)

(15) lexical ditransitive

a. *Chibua ko-**w**-eng'-a iwana ipfitabu.*
1.Chibua 1SM-2OM-give-FV 2.children 8.books

b. *Chibua ko-**pf**-eng'-a iwana ipfitabu.*
1.Chibua 1SM-8OM-give-FV 2.children 8.books
'Chibua is giving children books.'

(16) applicative[2]

a. *Mayi ko-**w**-ambik-il-a iwana ipfidyo.*
1.mother 1SM-2OM-cook-APPL-FV 2.children 7.food
'Mother is cooking food for the children.'

b. * *Mayi ko-**pf**-ambik-il-a ipfidyo iwana.*
1.mother 1SM-7OM-cook-APPL-FV 7.food 2.children
int. 'Mother is cooking food for the children.'

(17) a. causative
*Wanzehe wa-**mw**-ambik-its-a Chuma ipfidyo.*
2.elders 2SM-1OM-cook-CAUS-FV 1.Chuma 8.food
'The elders made Chuma cook food.'

b. * *Wanzehe wa-**pf**-ambik-its-a ipfidyo Chuma.*
2.elders 2SM-8OM-cook-CAUS-FV 8.food 1.Chuma
'The elders made Chuma cook food.'

2.4 Type 4: fully asymmetrical

Finally, type 4 languages do not show any symmetrical properties in double object constructions – these have always been known as asymmetrical languages. In ditransitives, applicatives and causatives, only the Recipient/applied/Causee object can be object-marked, as shown in (18–20).

[2] Marten & Ramadhani (2001: 266) note that "both orders of objects are fine, but only the benefactive object may be object marked (in general, the object marked object precedes the unmarked object, and it is the first object which is emphasized. In addition, applicatives without valency change can be used for predicate emphasis".

Swahili

(18) lexical ditransitive

a. *A-li-**m**-pa* *kitabu.*
1SM-PAST-1OM-give 7.book
'She gave him a book.'

b. * *A-li-**ki**-pa* *Juma.*
1SM-PAST-7OM-give 1.Juma
'She gave it to Juma.'

(19) applicative

a. *A-li-**m**-nunul-i-a* *kitabu.*
1SM-PAST-1OM-buy-APPL-FV 7.book
'She bought him a book.'

b. * *A-li-**ki**-nunul-i-a* *Juma.*
1SM-PAST-7OM-buy-APPL-FV 1.Juma
'She bought it for Juma.'

(20) causative

a. *A-li-**m**-kat-ish-a* *kamba.*
1SM-PAST-1OM-cut-CAUS-FV 9.rope
'She made him cut the rope.'

b. * *A-li-**i**-kat-isha* *Juma.*
1SM-PAST-9OM-cut-CAUS-FV 1.Juma
'She made Juma cut it.'

2.5 Summary of (a)symmetrical patterns

The languages studied thus illustrate that 'symmetry' is not necessarily a property of a whole language, and they also show that (some of) the variation in symmetrical object marking is structured, as summarised in Table 1.

Table 1: Symmetrical properties of double object constructions cross-Bantu

	CAUS	APPL	DITRANS	languages
type 1	✓	✓	✓	Zulu, Shona, Lubukusu, Kîîtharaka, Kimeru
type 2		✓	✓	Otjiherero, Southern Sotho
type 3			✓	Luguru
type 4				Swahili etc. (asymmetrical)

3 Implications of the implicational hierarchy

This implicational relation poses an empirical as well as a theoretical question. The empirical question is the following: If the implicational hierarchy in (3) holds crosslinguistically, are there indeed no languages with symmetrical double objects for applicatives and/or causatives but not ditransitives, and similarly are there no languages with symmetrical causatives but no symmetrical applicatives? This is a very clear empirical prediction that should be tested as more data become available for more languages.

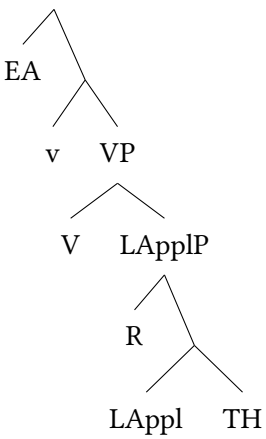
Assuming that the pattern in Table 1 is not accidental, the theoretical question is how this implicational relation can be accounted for in a model of syntax. In order to answer that question, we need to establish how symmetry is derived, which in turn requires a theory of the functional structure of the lower part of the clause and of object marking. I first present the structure of ditransitives in §3.1 and the mechanics of object marking in §3.2, then I introduce Haddican and Holmberg's (2012; 2015) analysis of symmetry in §3.3, and I add a motivation for it in §3.4. With all these ingredients in place (summary in §3.5), I return to the implicational relationship in §3.6.

3.1 The structure of ditransitives

Following Pylkkänen (2008), and considering the overt applicative and causative morphology in Bantu, I take the Recipient in a lexical ditransitive to be introduced by a low applicative head (LApplP), under V (21a). The Benefactive for an applied verb is introduced by a high applicative head (HApplP), between V and v (21b). For causatives, I assume that the Causee is introduced by a causative head (CausP) between V and v (21c), although one could equally well assume a

double little v with Caus in between, forming a bi-eventive structure (see further Pylkkänen 2008 on different heights of causatives).

(21) a.



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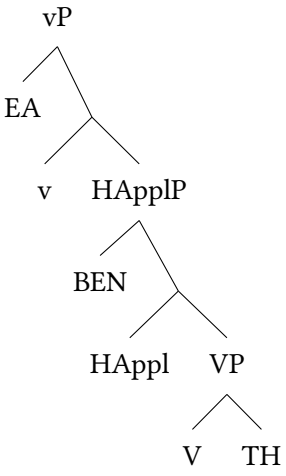
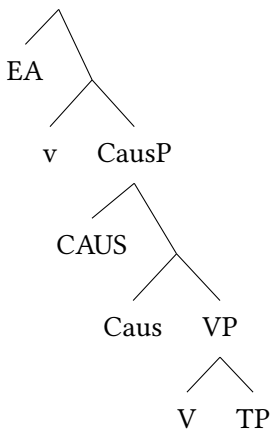


c.



If these structures underlie the double object constructions discussed, then they (and indeed the underlying conceptual considerations of generative grammar) suggest that asymmetry is basic, and symmetry is derived.[3] This appears

[3] This may be different for locative or instrumental applicatives – tests involving animacy could help to assess whether there is a 'dative alternation' as in English or a true double object construction, see Oehrle (1976), among others.

to be correct, since asymmetries keep cropping up in otherwise symmetrical languages but never the other way around, suggesting that asymmetry is always available and hence more basic. Furthermore, the asymmetry is always the same across Bantu: the Benefactive, Causee, or applied (i.e. higher) argument displays object properties, where the Theme argument lacks them. This supports an analysis of symmetry in terms of a derived accessibility of the Theme, i.e. the Theme starts out low and becomes available for syntactic operations (by movement, different featural probing or annihilating the intervening argument). This is further discussed in §3.3.

3.2 Object marking in ditransitives

I assume that Bantu object marking in ditransitives is the result of an Agree relation between little v and one of the objects. Within the Probe-Goal system of Agree (Chomsky 2001), I assume that object markers are the spell-out of little v's uninterpretable φ features agreeing with the interpretable φ features of an object Goal (Roberts 2010).[4] I further assume that lower arguments need Case licensing,[5] and that Case licensing can be independent of φ agreement, in the sense that a lower functional head can be Case-licensing but not carry uφ features (Baker 2012; Preminger 2014; Bárány 2015). Lower functional heads can thus have a [uφ] and/or a [Case] feature.

In a monotransitive structure, the uninterpretable features on v simply probe, find the first and only object (the Theme) and agree with it. In a double object construction, however, the Theme argument is always lower than the Recipient/Benefactive/Causee argument. Assuming that locality conditions hold (Minimal Link Condition),[6] the Theme is not available for agreement with the v or T head for object marking and passivisation, respectively. This is due to one of two reasons: either the higher argument will intervene between the Probe on v/T and the Theme, or the Appl/Caus head will already have licensed the Theme, making

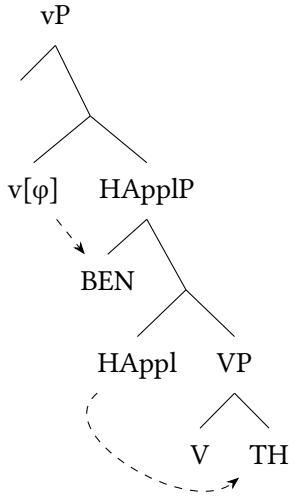
[4]Under Roberts' (2010) approach, object marking is the spell-out of an Agree relation with a defective Goal: if the features of the Goal are a subset of the features of the Probe, the Agree relation is indistinguishable from a copy/movement chain, where normally only the highest copy is spelled out. The lower copy is not spelled out, due to chain-reduction (Nunes 2004). This gives rise to incorporation of the Goal, being spelled out on the Probe. Whether the Agree relation is spelled out morphologically is thus dependent on the structure of the Goal. See Iorio (2014) for details on the approach as applied to the Bantu language Bembe, and van der Wal (2015a) for a comparative approach to Bantu object marking.

[5]This is debatable for the Bantu languages; see Diercks (2012); van der Wal (2015b) and Sheehan & van der Wal (2016). However, the debatable status mostly concerns nominative Case.

[6]But see Baker & Collins (2006) who propose parameterisation of the Minimal Link Condition.

it inactive for further Agree relations. This is what results in asymmetry: the LAppl/HAppl/Caus head always licenses the Theme in its c-command domain, and v can only license the highest argument. Since only v has φ features, it follows that only the highest object can be spelled out as object marking (if the Goal is defective). This is represented in (22).

(22) v agrees with BEN (and can spell out as object-marker)



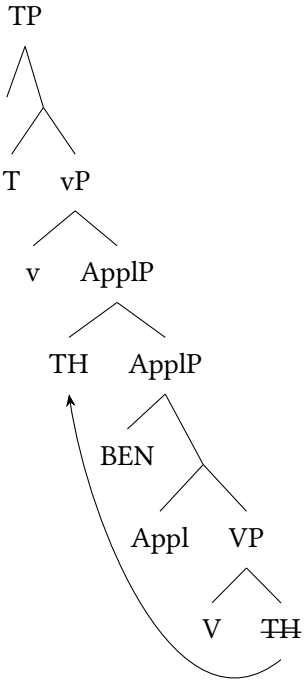
3.3 Symmetry

In "symmetrical languages" the Theme can also be object marked. The [uφ] features of v must thus have established an Agree relation with the lower Theme, despite an intervening Benefactive.[7] Assuming locality conditions, if the Theme is agreed with, it must either have been higher than the Benefactive at the time of agreement (the locality approach), or the Benefactive must have somehow been invisible for v's Probe (the Case approach).

The locality analysis is proposed by McGinnis (1998a; 2001); Anagnostopoulou (2003); Doggett (2004); Pylkkänen (2008); Jeong (2007). They propose that a high applicative between V and v supplies a landing place for the Theme object in a second specifier (23), whether attracted by Appl itself or moving to a phase edge (Appl being argued to be a phase head). This results in the Theme being closer to v than the applied argument.

[7] I will illustrate the analysis with a high applicative, but the same holds for the low applicative and the causative.

(23)



Ura (1996) and Anagnostopoulou (2003) explicitly link this movement to object shift (cf. Kramer 2014; Harizanov 2014; Baker & Kramer 2015). However, there is not always evidence for such movement, for example when a language is by and large symmetrical but has a very strict word order, as in Luganda. Luganda double objects display symmetrical behaviour for the two tests of pronominalisation (24) and passivisation (25).

Luganda (Ssekiryango 2006: 67, 72)

(24) a. *Maama a-wa-dde taata ssente.*
1.mother 1SM-give-PFV 1.father 10.money
'Mother has given father money.'

b. *Maama a-mu-wa-dde ssente.*
1.mother 1SM-1OM-give-PFV 10.money.
'Mother has given him money.'

c. *Maama a-zi-wa-dde taata.*
1.mother 1SM-10OM-give-PFV 1.father
'Mother has given it father.'

(25) a. *Maama a-were-ddw-a ssente.*
1.mother 1SM-give-PASS-FV money
'Mother has been given money.'

b. *Ssente zi-were-ddw-a maama.*
10.money 10SM-give-PASS-FV 1.mother
'The money has been given to mother.'

Nevertheless, Luganda shows a strict order Recipient > Theme, as is clear from (26) as compared to (24a).

(26) Luganda (Ssekiryango 2006: 69)
* *Maama a-wa-dde ssente taata.*
1.mother 1SM-give-PFV 10.money 1.father
int. 'Mother gave father money.'

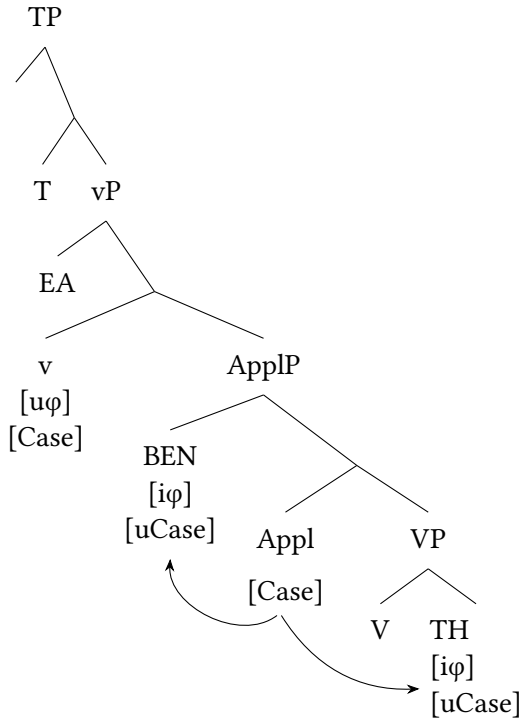
Furthermore, Haddican & Holmberg (2012; 2015) show that the correlation between object shift and symmetry is not corroborated by their research on Norwegian and Swedish, and they find that it is insufficient to rely on *just* locality to account for all the patterns found in Germanic languages.

Another problematic aspect of the locality-based approach, at least for McGinnis (2001), is that it predicts low applicatives to never be symmetrical. McGinnis proposes that lower arguments can only move to the second specifier of a phase head, that is, it 'leapfrogs' to the escape hatch. This functions well with high applicatives but does not work for low applicatives because, under McGinnis' analysis, this HAppl is a phase whereas LAppl is not. However, even if LAppl could be a phase, then it would still not allow the Theme to be moved to its specifier, since this would involve moving too locally, the same argument merging again with the same head. Abels (2003) observes that because of antilocality, direct complements of phase heads are frozen: they cannot escape by moving to the specifier of the phase head. For double object constructions, this means that the Theme in a low applicative can never move higher than the Recipient (unless there is a higher phase head it can move to), and therefore it will never be the first argument found by v. However, if lexical ditransitives involve a low applicative (as suggested by their semantics), such symmetrical low applicative

structures do exist – they are even the most frequent in comparison with other ditransitive predicates, as the data in §2 show.

Haddican & Holmberg (2012; 2015) propose a different approach to symmetry in double object constructions: symmetry can derive from locality, but can also derive from variation in whether the extra Case associated with an applicative construction is assigned to the Theme or the Benefactive. This can be rephrased as variation in the ability of a functional head (applicative, causative) to assign Case to either the Theme object in its complement or to the Benefactive object in its specifier, as represented in (27). This means that v agrees with the remaining object, which can be either the Benefactive or the Theme, thereby deriving symmetry.

(27)

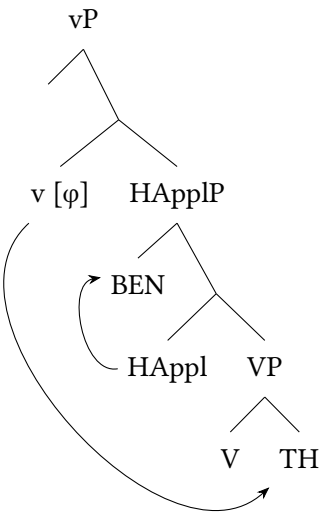


There are thus two possible derivations. If the applicative head agrees with the Theme, then v agrees with the highest argument (Benefactive); this is the same as in asymmetrical languages, see (22).[8] If in a symmetrical language the applicative

[8]Beyond Bantu there is another type of asymmetrical language with a so-called "indirective alignment" of double objects, where the lower functional head always licenses its specifier (e.g. Italian). This is an independent parameter (see §3.6).

head assigns Case to its specifier, i.e. to the Benefactive that it introduces, then this argument becomes invisible to v (cf. McGinnis 1998b).[9] The Theme object can thus be probed by v, which agrees with it in both Case and φ, and potentially spell out as an object marker, as represented in (28).

(28) v agrees with TH (and can object-mark it)



Note that the applicative head here only has a [Case] feature and no [uφ] features. The presence of the Case feature ensures that the second object is licensed (and invisible for v), whereas the absence of [uφ] features on Appl means that the argument agreeing with Appl cannot be object-marked: only the argument agreeing with v can spell out as an object marker. The presence of [uφ] just on v also accounts for the fact that there is only one object marker.

In languages with multiple object markers, such as Kinyarwanda (29), I speculate that lower functional heads introducing an argument also carry φ features and can therefore spell out additional object markers.

(29) Kinyarwanda (JD61, Beaudoin-Lietz et al. 2004: 183)
Umugoré a- ra- na- ha- ki- zi- ba- ku- n-
1woman SM1- DJ- ALSO- OM16- OM7- OM10- OM2- OM2SG- OM1SG-

[9] Assuming no defective intervention clause-internally, which has been argued for by Anagnostopoulou (2003) and Bobaljik (2008). See also Bruening (2014) for an argument against defective intervention per se.

someesheeshereereza.
read.CAUS.CAUS.APPL.APPL
'The woman is also making us read it (book) with them (glasses) to you for me there (in the house).'

The derivation of multiple object markers would be as follows. Following Julien (2002) I take it that the Bantu verb head moves in the lower part of the clause, picking up derivational suffixal morphology. The verb also gathers the φ features on the different functional heads that are spelled out as prefixes at the completion of the phase. Further prefixes such as negation, the subject marker and TAM morphology are heads that are spelled out in their individual positions and phonologically merged to the stem. The different derivations for object marking prefixes and other prefixes are reflected in the status of the stem plus the object marker(s) as a separate domain for tone rules, known as the "macrostem".

This analysis predicts that agreement with the Theme is always possible in these languages, i.e. that languages with multiple object markers are always symmetrical. This is indeed borne out for Tswana, Kinyarwanda, Kirundi, Ha, Haya, Luganda, Tshiluba, Totela and Chaga, the *only* exception so far being Sambaa. Riedel (2009) shows that Sambaa only allows object marking of the Theme if the Benefactive is also object marked, hence an asymmetrical pattern. This suggests that the additional probe responsible for multiple object marking in Sambaa is located not on lower functional heads, but on a higher functional head; see van der Wal (submitted). For the current paper I focus on languages with only one object marker.

3.4 Flexibility vs. optionality

A question for this approach to flexibility, which Haddican & Holmberg (2012; 2015) do not address, is what determines whether a low functional head licenses an argument in its specifier or its complement. In an explanatory analysis this should not be completely optional. The hypothesis I want to put forward is that the 'direction' of licensing by a flexible head is determined by relative topicality of the two arguments.

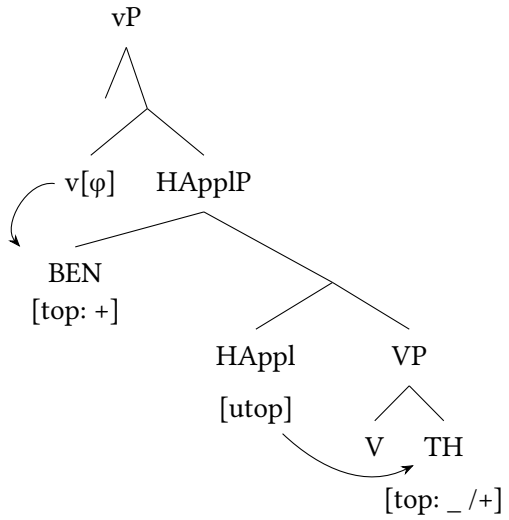
Concretely, the applicative head will Case-license the less topical of the two objects (Theme and Benefactive). The applicative head can do so because it introduces one of the arguments while also being merged with a structure that contains an unlicensed argument, thus 'seeing' both arguments. This analysis has obvious parallels with Adger & Harbour's (2007) proposal to account for restrictions in the cooccurrence of speech act participants (PCC effects), where the

applicative head can also see both arguments. A difference is that in their analysis the applicative head can only license the Person values on the Theme that the Recipient does *not* have, whereas in my analysis it can only value a subset of what it *does* have. Where the current account can still be extended along the lines of Adger & Harbour (2007) is the sensitivity of Appl to Person as well, not only to account for PCC effects but also for animacy effects as observed for Sotho (Morolong & Hyman 1977) and Zulu (Zeller 2011). Preliminary results show that sensitivity to Person indeed accounts for the attested animacy patterns (van der Wal 2016).

More technically, I propose that the applicative head has a [uTopic] probe which is restricted by the value of the Benefactive argument in its specifier: the head can only license arguments that are equal or lower in topicality than the argument it introduces. If the probed Theme is equal or lower in topicality than the Benefactive, then default Agree/Case-licensing downwards takes place. If the probed Theme is higher in topicality, the head instead licenses the Benefactive in the specifier. This can also be captured in binary terms, where objects have a topic feature with a + value or an absence of value.

When the Benefactive is specified as [topic: +], the applicative head licenses any Theme, whether [topic: +] or [topic: _], as represented in (30).

(30)



The Theme's absence of a value for topicality ([topic: _]) is compatible with the positive value for topicality on the Benefactive and hence the applicative head licenses the Theme. This entails that little v will in this situation always agree with the more topical Benefactive.

When the Theme is specified [topic: +], the values of head and Theme are compatible as well, and Appl will by default license the Theme, leaving the Benefactive again to be Case-licensed (and agreed with) by v. In other words, when both objects are topical, only the higher will be object-marked. This is in fact borne out in Zulu: when both DP objects are dislocated, only the higher can be object-marked. In (31) we know that both objects are dislocated because of the disjoint form of the verb and the accompanying prosodic phrases (not indicated here), see further Zeller (2015).

(31) Zulu (Adams 2010 via Zeller 2012: 224, 225)

a. *Ngi-ya-m-theng-el-a* *u-Sipho* *u-bisi.*
1SG.SM-PRES.DJ-1OM-buy-APPL-FV 1a-Sipho 11-milk

b. *Ngi-ya-m-theng-el-a* *u-bisi* *u-Sipho.*
1SG.SM-PRES.DJ-1OM-buy-APPL-FV 11-milk 1a-Sipho
'I am buying milk for Sipho.'

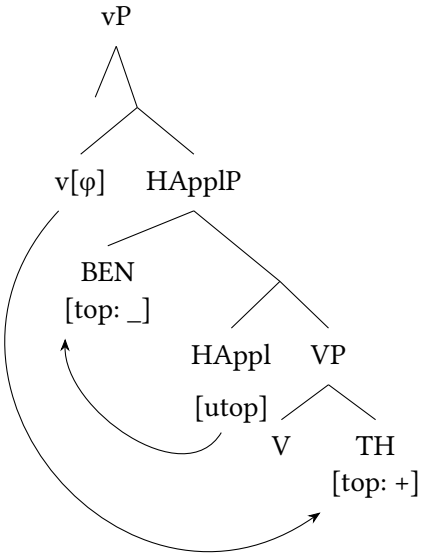
c. * *Ngi-ya-lu-theng-el-a* *u-Sipho* *u-bisi.*
1SG.SM-PRES.DJ-11OM-buy-APPL-FV 1a-Sipho 11-milk

d. * *Ngi-ya-lu-theng-el-a* *u-bisi* *u-Sipho.*
1SG.SM-PRES.DJ-11OM-buy-APPL-FV 11-milk 1a-Sipho
int. 'I am buying milk for Sipho.'

When the Benefactive is [topic: _], this is also the restriction on the probing applicative head. Hence, if the Theme is [topic: _], this is perfectly compatible with the Benefactive (and hence the applicative head), and Case-licensing from the applicative head is by default downwards, leaving v to agree with and Case-license the Benefactive.[10] However, if the Theme is [topic: +], this is not compatible with the absence of a topic value, and hence the applicative head will Case-license the Benefactive in its specifier, leaving the topical Theme to be agreed with and Case-licensed by v, as sketched in (32).

[10]It is in fact not possible to ascertain that v agrees with the Benefactive when both are non-topical since the object marker will in such cases not be spelled out anyway (under the view that the object marker spells out the features of a defective goal, i.e. φP, as in Roberts 2010). The correct V DP DP order comes out whether Appl licenses Theme or Benefactive, so at present this is irrelevant to the discussion.

(32)



A consequence of this analysis is that it is the more topical of the two arguments that will be left available for agreement with v. Indeed, object marking (= agreement with v) is crosslinguistically typically with the more topical or given object, in differential object marking as well as pronominalisation (see e.g. Adams 2010; Zeller 2014; 2015 for Zulu, Bax & Diercks 2012 for Manyika). Moreover, in a passive clause where v does not have either Case or φ features, T agrees with the more topical argument. This is expected, since it is known that a functional motivation behind a passive is the promotion of an erstwhile object not only to the syntactic function of subject, but also to the discourse function of topic (Givón 1994: 9). This is especially true for the Bantu languages where the preverbal domain favours or is restricted to topical elements (e.g. Morimoto 2006; Henderson 2006; Zeller 2008; Zerbian 2006; van der Wal 2009; Yoneda 2011).

The sensitivity of low functional heads to information structure is not a new proposal: Creissels (2004); Marten (2003); Cann & Mabugu (2007) and de Kind & Bostoen (2012) also show that applicatives are more than simple argument-introducing heads; in various Bantu languages they can be used with a non-canonical, information-structural, interpretation. To give just one example, Creissels (2004) first shows the familiar function of introducing a Benefactive argument in Tswana (33a), and the function of making a peripheral argument (the locative 'in the pot' in 33b) into a proper argument of the predicate.

(33) Tswana (S31, Creissels 2004: 13, adapted)

a. *Lorato o tlaa ape-el-a bana motogo.*
1.Lorato 1SM FUT cook-APPL-FV 2.children 3.porridge
'Lorato will cook the porridge for the children.'

b. *Lorato o tlaa ape-el-a motogo mo pitse-ng.*
1.Lorato 1SM FUT cook-APPL-FV 3.porridge PREP 9.pot-LOC
'Lorato will cook the porridge in the pot.'

Interestingly, Creissels then shows that applicatives in Tswana can also have a non-canonical function as triggering a focus reading of the locative (34).

(34) Tswana (S31, Creissels 2004: 15)
Lorato o ape-el-a mo jarate-ng.
1.Lorato 1SM cook-APPL-FV PREP 9.yard-LOC
'Lorato does the cooking *in the yard*.'

This can be taken as independent evidence for the sensitivity of the applicative head, and potentially other low functional heads, to discourse-related properties.

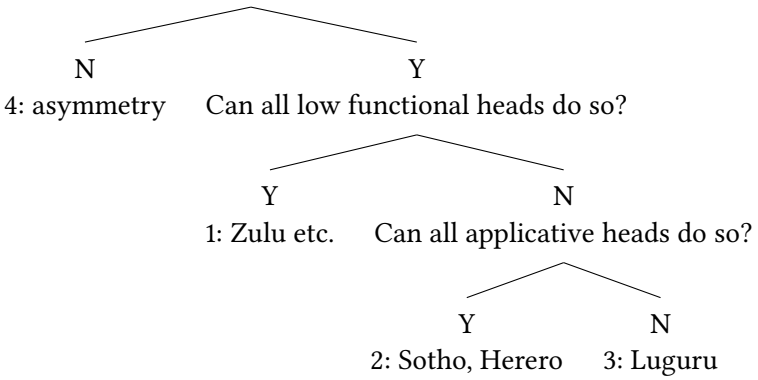
3.5 Interim summary

To summarise, assuming that double object constructions always involve an additional low functional head such as a causative, or a low or high applicative, the default structure is asymmetrical with the Theme lower than the Recipient/Benefactive/Causee argument. We can account for symmetrical behaviour of objects by appealing to flexibility of such a functional head to Case-license either the Theme in its complement or the argument in its specifier. I suggest that this is determined by the relative topicality of the two arguments. With this analysis of symmetry in place, we can return to the question of how we can understand the implicational relation between causative, applicative and lexical ditransitive predicates and symmetry.

3.6 Capturing the implicational relationship

The partial symmetry discovered for different predicate types can now be understood as subsets of low functional heads being flexible in licensing their complement or specifier. Languages vary, then, in which heads have this flexibility, i.e. flexible licensing must be parameterised. The implicational relation between different predicates can thus be captured in the following parameter hierarchy (35).

(35) Parameter hierarchy for the degree of symmetry



Apart from capturing the implicational relation between the different types of ditransitives, this parameter hierarchy is motivated by conceptual reasons too. First, organising parameters in a dependency relation rather than postulating independent parameters drastically reduces the number of possible combinations of parameter settings, i.e. the number of possible grammars, as shown by Roberts & Holmberg (2010), and Sheehan (2014).

Second, the parameter hierarchy can serve to model a path of acquisition that is shaped by general learning biases (the 'third factor' in language design, Chomsky 2005). Biberauer & Roberts (2015) suggest that two general learning biases combine to form a 'minimax search algorithm':

(36) Feature Economy (FE): postulate as few features as possible to account for the input [generalised from Roberts & Roussou 2003]

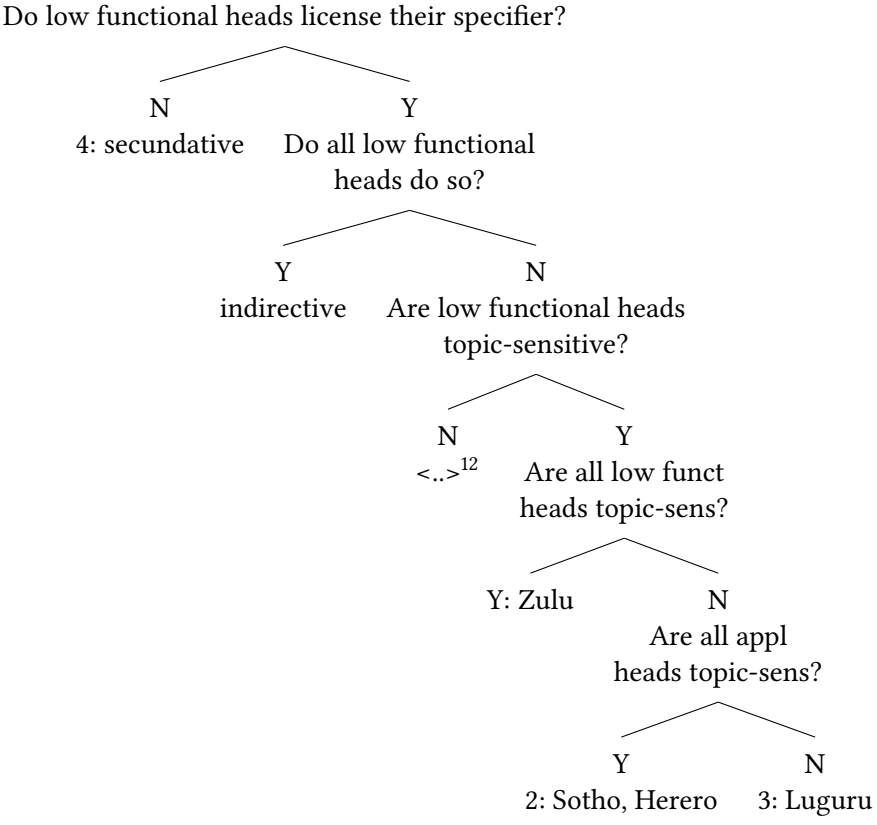
(37) Input Generalisation (IG): maximise available features [generalised from Roberts 2007]

If both FE and IG are observed with respect to applicative and causative heads, no features will be postulated on these heads, which for the current analysis of double objects results in default downward licensing and hence an asymmetrical system. When the language gives evidence that the higher object is sometimes licensed by a lower functional head, then an upwards licensing property must be postulated for such heads. This violates FE, but by IG the property is now taken to be present on all heads, leading to a system that is completely symmetrical (type 1). If the language then gives evidence that *some* heads are asymmetrical,

the parameter question is which subset of heads has the property, e.g. applicatives versus causatives.[11] We thus derive a 'none-all-some' order of implicational parameters and of parameter acquisition.

If topicality is indeed the motivation for flexible licensing, then the parameter can be rephrased as 'Which heads are sensitive to topicality?'. In fact, this fits into a more general hierarchy of ditransitive alignment patterns (Sheehan 2013), which captures two types of asymmetry. The first is secundative alignment, where the Recipient object behaves like the monotransitive object, i.e. 'I gave him the cake' but not *'I gave my friend it' (as in English). The second is indirective alignment, where the Theme behaves like the monotransitive object, i.e. 'I gave my friend it' but not *'I gave him the cake' (as in Italian). See further the typological overviews in Malchukov (2010; 2013).

(38) Parameter hierarchy for (a)symmetry in ditransitive alignment



[11]It remains to be seen what precise feature specification singles out the set of applicative heads.

4 Potential trouble

Even within the type 1 languages, which are fully symmetrical, patches of asymmetry emerge, particularly in combinations of derivations (passive, applicative, causative). I discuss two here.

4.1 Combinations of extensions

In Zulu, objects of doubly derived verbs with both a causative and an applicative still behave symmetrically. That is, the Causee (39b), the Benefactive (39a) or the Theme (39c) can be object marked.

(39) Zulu (Zeller 2011)
applicative + causative

a. *Usipho u-**m**-fund-is-el-a abafundi Zulu (uLanga).*
1aSipho 1SM-1OM-learn-CAUS-APPL-FV 2.student 7.Zulu 1a.Langa
'Sipho is teaching the students Zulu for him (Langa).'

b. *Usipho u-**ba**-fund-is-el-a uLanga Zulu (abafundi).*
1aSipho 1SM-2OM-learn-CAUS-APPL-FV 1a.Langa 7.Zulu 2.student
'Sipho is teaching them Zulu for Langa (the students).'

c. *Usipho u-**si**-fund-is-el-a uLanga abafundi (Zulu).*
1aSipho 1SM-7OM-learn-CAUS-APPL-FV 1a.Langa 2.student 7.Zulu
'Sipho is teaching it to the students for Langa (Zulu).'

This forms an interesting contrast with Kîîtharaka. Kîîtharaka is also a type 1 symmetrical language, like Zulu: either object can be object-marked in applicatives (40) as well as causatives (41).
Kîîtharaka (Muriungi 2008: 83, 84)

(40) applicative

a. *Maria a-kû-**mî**-tûm-îr-a John.*
1.Maria 1SM-T-9OM-send-APPL-FV 1.John
'Maria has sent it to John.' (a letter)

[12] This is a theoretical possibility that I have not encountered in the data, representing flexible licensing that is sensitive to other factors.

b. *Maria a-kû-**mû**-tûm-îr-a barûa.*
1.Maria 1SM-T-1OM-send-APPL-FV 9.letter
'Maria has sent him/her a letter.'

(41) causative

a. *Mu-borisi a-kû-**mî**-nyu-ithi-a mû-ûragani.*
1-police 1SM-T-9OM-drink-CRC-FV 1-murderer
'The policeman has coerced the murderer to drink it.' (the poison)

b. *Mu-borisi a-kû-**mû**-nyu-ithi-a cûmû.*
1.-police 1SM-T-1OM-drink-CRC-FV 9-poison
'The policeman has coerced him/her to take the poison.'

However, when a predicate has both a causative and an applicative derivation, the objects in Kîîtharaka are no longer symmetrical: only the applied object can be object-marked (42a), and object-marking the Causee or the Theme results in ungrammaticality (42b, c).

(42) applicative + causative (Muriungi 2008: 83)

a. *I-ba-ra-**ka**-thamb-ith-î-îr-i-e Maria nyomba.*
FOC-2SM-PSTY-12OM-wash-CRC-APPL-PFV-IC-FV 1.Maria 9.house
'They coerced Maria to wash the house for it (e.g the cat).'

b. * *N-a-ra-**ba**-thamb-ith-î-îr-i-e ka-baka nyomba.*
FOC-1SM-PSTY-2OM-wash-CRC-APPL-PFV-IC-FV 12-cat 9.house
'He/she coerced them to wash the house for the cat.'

c. * *I-ba-ra-**mî**-thamb-ith-î-îr-i-e Maria ka-baka.*
F-2SM-PSTY-9OM-wash-CRC-APPL-PFV-IC-FV 1.Maria 12-cat
'They coerced Maria to wash it for the cat.'

My hypothesis is that this sudden asymmetry is due to Kîîtharaka having a combination of the short and long causative (Bastin 1986), glossed by Muriungi as 'CRC' (coerce causative) and 'IC' (inner causative), which occur on either side of the applicative. It may thus be that the coerce causative is flexible, but the structurally higher inner causative is not. If this is true, the hierarchy in (38) should involve an extra layer asking about different types of causatives.[13]

[13] See also Ngonyani & Githinji's (2006) multiple applicatives in Kikuyu, which appear to behave asymmetrically despite the language's otherwise fully symmetrical properties. It remains to be seen how animacy plays a role in these counterexamples, and also at which height the higher applicative is merged.

4.2 Symmetry in passives

In Zulu, Lubukusu, Kinyarwanda and Luganda both object marking and passivisation are symmetrical: either object can be object-marked and either object can become the subject of a passive. However, the languages differ in the combination of these operations.

In Kinyarwanda and Luganda, either object can be object-marked in the active as well as the passive. That is, the Theme can be object-marked in a Benefactive passive (43b, 44a), and the Benefactive can be object-marked in a Theme passive (43c, 44b).

(43) Kinyarwanda (Ngoboka 2005: 88, glosses adapted)
symmetrical passive OM

a. *Umusore y-a-hiing-i-ye umugore umurima.*
1.young.man 1SM-PST-plough-APPL-ASP 1.woman 3.field
'The young man ploughed the field for the woman.'

b. *Umugore y-a-**wu**-hiing-i-w-e n' umusore.*
1.woman 1SM-PST-3OM-plough-APPL-PASS-ASP by 1.young.man
lit. 'The woman was it ploughed for by the young man.'

c. *Umurima w-a-**mu**-hiing-i-w-e n' umusore.*
3.field 3SM-PST-1OM-plough-APPL-PASS-ASP by 1.young.man
'The field was ploughed (for) her by the young man.'

(44) Luganda (Ranero 2015)

a. *O-mw-ana y-a-zi-w-ew-a luli e-ssente.*
AUG-1-child 1SM-PST-9aOM-give-PASS the.other.day AUG-9a.money
'The child was given it the other day, the money.'

b. *E-ssente za-a-mu-w-ew-a luli o-mw-ana.*
AUG-9a.money 9aSM-PST-1OM-give-PASS the.other.day AUG-1-child
'The money was given to him/her the other day, the child.'

In Zulu and Lubukusu, on the other hand, the Benefactive/Recipient cannot be object-marked in a (otherwise perfectly acceptable) Theme passive, as in (45b) and (46b), whereas the opposite is still possible, as shown in (45a) and (46a).

(45) Lubukusu (Justine Sikuku p.c. July 2015)

a. Recipient-passive with Theme-OM
*Baa-sooreri ba-a-**chi**-eeb-w-a (chi-khaafu).*
2.boys 2SM-PAST-10OM-give-PASS-FV 10-cows
'The boys were given them (cows).'

b. ?? Theme-passive with Recipient-OM
*Chi-kaafu cha-a-**ba**-eeb-w-a (baa-sooreri).*
10-cows 10SM-PST-2OM-give-PASS-FV 2-boys
'Cows were given to them (the boys).'

(46) Zulu (Adams 2010: 26)

a. Recipient-passive with Theme-OM
*Aba-ntwana ba-ya-**yi**-fund-el-w-a (in-cwadi).*
2-child 2SM-PRES.DJ-9OM-read-APPL-PASS-FV 9-book
'The children are being read it (the book).'

b. * Theme-passive with Recipient-OM
*In-cwadi i-ya-**ba**-fund-el-w-a (aba-ntwana).*
9-book 9SM-PRES.DJ-2OM-read-APPL-PASS-FV 2-children
int. 'The book is being read to them (the children).'

The generalisation is thus that the Theme can be object-marked in a Benefactive passive, but the Benefactive cannot be object-marked in a Theme passive. The same asymmetry holds for extraction: the Theme can be extracted from a Benefactive passive, but the Benefactive cannot be extracted from a Theme passive. Interestingly, Norwegian and North-Western English, which are otherwise symmetrical too, show the same restriction as Zulu and Lubukusu. Crucially, there are no languages in which the asymmetry is the other way around (i.e. banning Theme extraction in a Benefactive passive).

A promising analysis of this asymmetry in passives takes v to be a phase in the active, but *not* to be a phase in the passive (Chomsky 2008; Legate 2012). Instead, in the passive, Appl (or Caus) is a phase and bears φ features, since Appl is now the highest head with full argument structure (see Chomsky's (2008) definition of the lower phase). If object marking is indeed the spell-out of a (downward) Agree relation, the exceptional presence of φ features on Appl in Zulu and Lubukusu passives implies that only the Theme can be object-marked, since the Benefactive is higher than Appl and upwards agreement cannot be spelled out as an object marker (under Roberts' 2010 approach to clitics). Either object is thus

still available for passivisation, but only the Theme can be object-marked in the passive. For Kinyarwanda, I proposed at the end of §3.3 that Appl is endowed with φ features in the active too (accounting for the occurrence of multiple object markers) – the presence of φ features is thus independent of phasehood in this language, which could explain the consistent symmetry throughout the passive in this language. The same goes for Luganda, which also allows multiple object markers.

This analysis for the combination of passive and extraction is further pursued in joint work with Anders Holmberg and Michelle Sheehan, suggesting that movement of the Theme to the outer specifier of the Appl phase head traps the Benefactive object for A-bar movement to specCP (under PIC2).

5 Summary and conclusion

Upon closer examination, Bantu languages that display symmetrical double object constructions all show some asymmetry. A novel type of partial asymmetry presented in this paper is the variation between different types of ditransitive predicates, which appears to have an implicational pattern: if a language is symmetrical for causatives, it is also symmetrical for applicatives, and if it is symmetrical for applicatives, it is also symmetrical for lexical ditransitive predicates. Assuming that object marking spells out agreement on little v, and assuming that second objects are introduced by separate lower functional heads (Caus, HAppl and LAppl), symmetrical behaviour of multiple objects can be understood as the ability of such heads to Case-license either the argument they introduce in their specifier or the lower argument in their complement. Which argument it licenses depends on their relative topicality, with the low functional head licensing the least topical of the two. The remaining argument will be Case-licensed and agreed with by little v (active) or T (passive), which thus explains object marking and passivisation of the most topical argument. The implicational relationship between the types of predicates can be captured in a parameter hierarchy, motivated by third-factor principles.

Further research should clearly take into account more Bantu languages to test whether the appearing implicational pattern indeed holds true (especially since type 3 is now only confirmed for one language, Luguru). A particularly interesting language to look at here is Kinande, which shows a linker between two objects. Baker & Collins (2006) propose an account in terms of Case-licensing, which however Schneider-Zioga (2014) shows to not account for constructions in which the linker appears between an argument and an adjunct.

The current paper only concerns double object constructions with two DP arguments that have thematic roles as Causee, Benefactive, Recipient and Theme. Taking into account predicates with a DP and a PP argument (cf. Bruening 2010; Jeong 2007; Baker & Kramer 2015) and other grammatical roles such as Locatives and Instrumentals is likely to change the picture (see e.g. Baker 1988; Gerdts & Whaley 1991; 1993; Marantz 1993; Alsina & Mchombo 1993; Ngonyani 1996; 1998; Simango 1995; Nakamura 1997; Ngoboka 2005; 2016; Zeller & Ngoboka 2006; Jerro 2015), as well as possessor raising constructions that take a similar shape (Simango 2007; Morolong & Hyman 1977). However, it should be established beforehand whether the base-generated structure of these (locative, instrumental) constructions are the same as for the double object construction, considering that the so-called dative alternation is argued to actually be based on different underlying structures (Pesetsky 1995; Harley 2002; Bruening 2010; see also footnote 3).

A final point is that the current paper considers primarily object marking, with an extension to A-movement in the passive, but not much is known about the symmetrical or asymmetrical behaviour of different (causative, applicate) predicates for A-bar operations such as relativisation (Nakamura 1997), which the proposed analysis does not make any independent predictions for.

Abbreviations and symbols

Numbers refer to noun classes, or to persons when followed by SG or PL.

APPL	applicative	OM	object marker
ASP	aspect	OPT	optative
BEN	Benefactive	PASS	passive
CJ	conjoint verb form	POSS	possessive
CAUS	causative	PAST	past tense
CRC	coerce	PROG	progressive
DEM	demonstrative	R	Recipient
DJ	disjoint verb form	RECPAST	recent past
DOC	double object construction	SM	subject marker
FV	final vowel	T	tense
IC	inner causative	TH	theme
int	intended meaning		

Acknowledgements

This research is funded by the European Research Council Advanced Grant No. 269752 *Rethinking Comparative Syntax*. I want to express my thanks to Michael Marlo, Michael Diercks, Rodrigo Ranero, Nancy Kula, Jochen Zeller, Jean Paul Ngoboka, Leston Buell, David Iorio, Jekura U. Kavari, Thabo Ditsele, Hannah Gibson, Lutz Marten, Justine Sikuku, Andrej Malchukov, Carolyn Harford, Claire Halpert, Nikki Adams, Patricia Schneider-Zioga, Peter Githinji, Chege Githiora, Paul Murrell, Joyce Mbepera, Judith Nakayiza, Saudah Namyalo and the ReCoS team (Ian Roberts, Michelle Sheehan, Timothy Bazalgette, Alison Biggs, Georg Höhn, Theresa Biberauer, Anders Holmberg, Sam Wolfe and András Bárány), for sharing and discussing thoughts and data with me. Thanks also to the audiences at CALL 2015 and LAGB 2015, and to two anonymous reviewers. Any errors and misrepresentations are mine only.

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