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Topic resumption in Bamiléké Ngemba: Animate/inanimate asymmetries and strictly local Impoverishment

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Ngemba displays an interesting asymmetry in topicalization. Unlike subject topics, which are always resumed, object topics can only be resumed if the topic XP is animate. If it is inanimate, the presence of a resumptive pronoun is ungrammatical, unless the topic XP is a member of a conjunct (&P). In this paper, I argue that the absence of resumptive pronouns (RPs) with inanimate objects results from an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others. I propose that this rule is structurally constrained by sisterhood to V, such that it fails to apply to members of conjuncts because they are inside a &P. Overall, the Ngemba data call for a theory of resumption that goes beyond chain reduction (van Urk 2018; Scott 2021; Georgi & Amaechi 2023; Yip & Ahenkorah 2023). The analysis also strengthens the theoretical observation that impoverishment rules are (and need to be) featurally (Nevins 2011; Arregi & Nevins 2012; Keine & Müller 2020, among others) and structurally (Kallulli & Trommer 2011; Bobaljik 2012; Božič 2020; Fongang 2024) constrained.

1 Introduction

The literature on resumptive pronouns has shown that, more commonly, base-generation dependencies require an RP, whereas movement dependencies often leave behind gaps. This is illustrated in (1) and (2) with data from Irish and Swedish. As discussed by McCloskey (2006), the Irish example in (1) requires a resumptive pronoun, and is immune from the wh-island constraint, thereby suggesting that we are in the presence of a base-generation dependency.[1]

(1) na hamhráin sin   nach bhfuil fhios   cé   a chum   **iad**
     the songs   DEMON NEG C is   knowledge who C composed them
     'Those songs that we don't know who composed them.'   (*Irish*: McCloskey 2006: 99)

The Swedish example in (2), however, involves movement (see McCloskey 2006 for details), and the resumptive pronoun position is filled by a gap.

(2) Vilven ord   visste ingen hur det stavas   _?
     which word knew no one how it   is-spelled GAP
     'Which word did nobody know how it is spelled?'   (*Swedish*: McCloskey 2006: 108)

Resumptive pronouns, it has also been demonstrated, can appear in movement as well as base-generation dependencies in a single language and across languages. Georgi & Amaechi (2023), for example, have shown extensively that, in Igbo, while topicalization (3-a) involves base-generation, focus (3-b) is derived by movement.[2] Although (3-a) and (3-b) instantiate different types of structural dependencies, they both feature RPs.

(3) a. Àdá, Ézè hụ̀-rụ̀ **yá**
         Ada Eze see-rV 3SG.ACC
         'As for Ada, Eze saw her.'   (*Igbo*: Georgi & Amaechi 2023: 966)
     b. Àdá kà   Ézé hụ̀-rụ̀ [DP ńkị́‘tá ‘**yá**]
         Ada FOC Eze see-rV dog   3SG.GEN
         'Eze saw ADA's dog.'   (*Igbo*: Georgi & Amaechi 2023: 974)

The literature also argues that resumptive pronouns do not always match or fully match their nominal antecedents in features. Scott (2021) has, for example, shown that Swahili RPs do not always fully match their antecedents in features. She argues that the RP *-ye* (4-b) is unmarked for person features, but *-mi* (4-a) is not. Although the clefted pronouns (based on the translations) in

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[1] The example in (1) cannot be interpreted such that the RP repairs the island violation because, as McCloskey writes, Irish RPs 'show none of the properties' of movement (McCloskey 2006: 109).

[2] One of the tests Georgi & Amaechi (2023) use to diagnose movement vs base-generation tracks tonal reflexes of movement. The basic assumption behind this test is that the tone of the last vowel of a subject becomes high when it is crossed over by a moved XP in Igbo. Compare, for example, *Ézè* in (3-a) to *Ézé* in (3-b).

(4) are identical and have person features, their resumptive pronoun counterparts are different. While the person-less pronoun *-ye* is grammatical in (4-b), it is ungrammatical in (4-a), where regular *-mi* is preferred.

(4) a. Mini ndi-ye amba-ye u-li-ondoka kwa sababu u-li-cheza na-**mi**/*-ye
         1SG COP-1 AMBA-1 2SG-PST-leave for reason u-li-cheza with-1SG/*-[RP]
         'It is me who you left because you danced with (me).'
     b. Mini ndi-ye amba-ye u-li-enda na-**ye**/*-mi kabla ya ku-cheza na-ye
         1SG COP-1 AMBA-1 2SG-PST-go with-[RP]/*-1SG before of 15-dance with-[RP]
         'It is me who you went with _t before dancing with _p.' (*Swahili*: Scott 2021: 813)

Resumption can also be sensitive to the categorial feature of the antecedent. In Asante Twi, for example, while DP focus (5-a) triggers resumption, PP focus (5-b) does not (Korsah & Murphy 2020; Hein & Georgi 2021).

(5) a. Hwáń na Yaw pέ *ø/**no**?
         who FOC Yaw like GAP/RP
         'WHO does Yaw like?'   (*Asante Twi*: Korsah & Murphy 2020: 845)
     b. [PP Akonwá nó mú] na Kofí dá ø/*hɔ anɔpá
         chair   DEF in FOC Kofi lie GAP/RP morning
         'Kofi is lying IN THE CHAIR in the morning.'
                                          (*Asante Twi*: Korsah & Murphy 2020: 847)

This paper is a contribution to ongoing research on resumption in natural languages, using data from the understudied Grassfields Bantu language Ngemba. It shows that although Ngemba object topics are base-generated, only animate object XPs can be resumed. Inanimate objects cannot, despite the existence of a corresponding pronoun. This, I show, poses a challenge for theories of resumption that argue that gaps are closely tied to movement, and are derived from movement and chain reduction (e.g., van Urk (2018)). If base-generation dependencies can also force the presence of a gap, then we need a theory of resumption that does not (only) rely on copy-deletion. I propose one that is dependent on Impoverishment.

2 The data

In Ngemba (Grassfields Bantu, Cameroon), subject and object topicalization behave differently with respect to resumption.[3] Unlike subject topics, which are always resumed, object topics

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[3] Ngemba is not the only language that has a subject-object asymmetry in resumption. As discussed by Adesola (2010), Yoruba also does. The Yoruba facts are, however, completely different from Ngemba. In Yoruba, while object XPs must be resumed by fully-matching RPs, subjects can be resumed by a non-matching RP. Adesola (2010) argues that the non-matching subject RP is a form of dummy pronoun that is inserted to satisfy the EPP in Yoruba.

can only be resumed if the topic XP is animate. If it is inanimate, the presence of a resumptive pronoun is ungrammatical, unless the topic XP is a member of a conjunct (&P). The examples in (6) show topicalization of animate and inanimate subject DPs.[4] In (7) and (8), I illustrate topicalization of animate and inanimate objects in non-conjunct (7) and in conjunct (8) contexts.[5] The topicalized XPs are sentence-initial, and followed by the topic marker *á*.

(6)　　a.　ø-ŋgàŋfàʔ á,　*(**í**)　　　wwù　sí
　　　　　　1-worker　TOP, 3SG.AN.NOM fall.PST　down
　　　　　　'As for the worker, he fell down.'

　　　　b.　ø-ndɔ́　á,　*(**á**)　　　　wwù　sí
　　　　　　1-house　TOP, 3.INAN.NOM fall.PST　down
　　　　　　'As for the house, it fell down.'

(7)　　a.　ø-ŋgàŋfàʔ á,　ø-pǔsì zhó　　*(**ní**)
　　　　　　1-worker　TOP, 1-cat　see.PST 3SG.AN.ACC
　　　　　　'As for the worker, the cat saw him.'

　　　　b.　ø-ndɔ́　á,　ø-pǔsì zhó　(***zhé**)
　　　　　　1-house　TOP, 1-cat　see.PST 3.INAN
　　　　　　'As for the house, the cat saw it.'

(8)　　Topicalization of a member of &P

　　　　a.　ø-ŋgàŋfàʔ á,　ø-pǔsì zhó　　*(**ní**)　　pàà ø-mén
　　　　　　1-worker　TOP, 1-cat　see.PST 3SG.AN.ACC and 1-child
　　　　　　'As for the worker, the cat saw him and the child.'

　　　　b.　ø-mbáŋ á,　ø-pǔsì zhó　　*(**zhé**) pàà ø-kwɔ̀ʔ
　　　　　　1-pot　TOP, 1-cat　see.PST 3.INAN and 1-chair
　　　　　　'As for the pot, the cat saw it and the chair.'

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[4] The data that I present and analyse in this paper are from Baméka-Ngemba, and were collected during two fieldtrips (August 2022 and July 2023) to Cameroon. I am particularly grateful to my Ngemba consultants for sharing their knowledge of the language with me.

[5] I gloss the resumptive pronoun in (6-b) without number specification because number is not marked for inanimates (i), but for animates (ii).

(i)　mə-ndɔ́ á,　*(**á**)　　　wwù　sí
　　　6-house TOP, 3.INAN.NOM fall.PST　down
　　　'As for the houses, they fell down.'

(ii)　mə-rǎŋfàʔ á,　*(**wóp**)　wwù　sí
　　　2-worker TOP, 3PL.AN.NOM fall.PST　down
　　　'As for the workers, thye structure of the second-perse fell down.'

As the examples in (7) show, the presence of the resumptive pronoun is required with animate objects, but ungrammatical with inanimates, unless it is a member of a conjunct (8-b).[6] A careful look at the Ngemba facts reveals that resumptive pronouns are taken from the paradigm of personal pronouns, and using any one of them in (7-b) is ungrammatical. **Table 1** gives an overview of the relevant personal pronouns in the language.

	1SG	**2SG**	**3SG.AN**	**3SG.INAN**	**1PL**	**2PL**	**3PL.AN**	**3PL.INAN**
NOM	mə́	ɔ́	í	**á**	pə̀ə̀k	pùù	**wóp**	**á**
ACC	ná	nɔ́	ní	**zhé**	wə́k	wú	**wóp**	**zhé**
OBL	mmò	wwɔ̀	zhìə́	**zhé**	pə̀k	pù	pó	**zhé**

Table 1: Personal pronouns in Ngemba (syncretisms in bold).

Topicalization of an object pronoun cannot feature a resumptive pronoun as well, if the topic pronoun is inanimate (10). It must, if it is animate (9). The topic pronouns in (9) and (10) are marked for oblique case (probably because such topics are inside a PP, based on the reading 'as for x…'.)

(9)   zhìə́ á,   ø-pǔsì zhó   *(**ní**)
       him TOP, 1-cat   see.PST 3SG.AN.ACC
       'As for him, the cat saw him.'

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[6] I only illustrate first-conjunct topicalization here because the conjunction *pàǎ* 'and' also has the meaning of English 'with', and topicalization of second conjuncts requires the use of an oblique pronoun. This is easy to see when the topicalized XP is animate (c.f., (i)). In (i-a), for example, the second member of a conjunct is topicalized, and the RP that is required is oblique *zhìə́*, but not accusative *ní*. When the first member of the conjunct is topicalized (i-b), *ní* is the correct RP.

(i)   a.   Deffo á,   ø-pǔsì zhó   Mba pàǎ ✗(**ní**)/✔**zhìə́**
             Deffo TOP, 1-cat   see.PST Mba and 3SG.AN.ACC/3SG.AN.OBL
             'As for Deffo, the cat saw Mbah and him.'
       b.   Mba á,   ø-pǔsì zhó   ✔**ní**/✗**zhìə́**   pàǎ Deffo
             Mba TOP, 1-cat   see.PST 3SG.AN.ACC/3SG.AN.OBL and Deffo
             'As for Mba, the cat saw him and Deffo.'

The RP is the same with inanimate object XPs, whether the first (ii-a) or second (ii-b) member of the conjunct is topicalized.

(ii)   a.   ø-mbáŋ á,   ø-pǔsì zhó   *(**zhé**) pàà ø-kwɔ̀ʔ
             1-pot   TOP, 1-cat see.PST 3.INAN and 1-chair
             'As for the pot, the cat saw it and the chair.'
       b.   ø-kwɔ̀ʔ á,   ø-pǔsì zhó   ø-mbáŋ pàà *(**zhé**)
             1-chair TOP, 1-cat see.PST 1-pot   and 3.INAN
             'As for the pot, the cat saw the chair and it.'

I take this to mean that the inanimate pronoun is syncretic in the accusative and the oblique.

(10)   zhé   á,   ø-pǔsì   zhó   (*RES)
      it   TOP,   1-cat   see.PST   3.INAN
      'As for it, the cat saw it.'

The inanimate 3rd person pronouns in **Table 1** are also syncretic in both plural and singular contexts, suggesting that they are underspecified for number information. **Table 1** also shows that there is a 3rd person inanimate object pronoun in Ngemba, albeit syncretic in both the accusative and the oblique. Further evidence that the language has a 3rd person inanimate pronoun, and that the gap is created by topicalization comes from comparing regular pronoun use in (11) to its topicalization counterpart in (12). The nominal antecedents in (11) and (12) are inanimate, yet resumption is only possible in regular pronoun use (11). It is ungrammatical in topicalization (12).

(11)   Sita   zhú   kɘ̀sálà.   Pùù   hò   lá   ***(zhé)**
      Sita   buy.PST   cassava.   2.PL.NOM   FUT   cook   3SG.INAN
      'Sita bought cassava. You will cook it (someday).'

(12)   kɘ̀sálà   á,   Pùù   hò   lá   **(*zhé)**
      cassava   TOP,   2.PL.NOM   FUT   cook   3SG.INAN
      'As for cassava, you will cook it.'

These sets of facts, therefore, beg the question; why inanimate object XP topicalization feature a gap, despite the existence of a corresponding resumptive pronoun? The analysis will argue that the gap results from an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others. That the morphology can see and manipulate information-structure-related features such as [TOP] follows from Baier (2018) who, in his cross-linguistic account of anti-agreement effects, argues that such features can participate in morphological spell out and, importantly, trigger operations such as Impoverishment (see also Ershova To appear). I propose that the [TOP] feature is passed onto the pronoun position via binding. This presupposes that the topicalized XP has a topic feature which it gets, I assume, from the topic marker before binding. That binding, but not chain formation is involved, stems from the fact that topicalization in Ngemba involves base-generation, and not movement (c.f., Section 3 for empirical evidence). Under this view, one prominent approach, which I adopt in this paper, is that the features of the antecedent are passed onto the pronoun position via Agree-related binding (see, for example, McCloskey 2006; Kratzer 2009; Wurmbrand 2017; Stegovec 2020). In the course of feature transfer between the topic XP and the pronoun position, the [TOP] feature is passed onto the pronoun position. The node that spells out the pronoun is then deleted, if both [INAN] and [TOP] are present. This explains the fact that pronouns are required in regular pronoun use, as the topic feature is absent in such contexts. To account for the behaviour of conjuncts, I propose that the obliteration rule is structurally constrained by sisterhood to V, such that it fails to apply to

members of a conjunct because they are inside a &P.[7] The paper, therefore, makes the following contributions to existing literature. Empirically, it shows that base-generation dependencies can feature a gap, despite the presence of a corresponding RP. Theoretically, it argues for an account of gaps in resumption that does not rely on copy deletion and shows that impoverishment rules, if the analysis is correct, are (and need to be) featurally (Nevins 2011; Arregi & Nevins 2012; Keine & Müller 2020, among others) and structurally (Kallulli & Trommer 2011; Bobaljik 2012; Božič 2020; Fongang 2024) constrained.

The paper argues that previous accounts of resumption which rely on chain reduction cannot account for the Ngemba data if base-generation, and not movement, is involved. In the next section of this paper, I provide empirical arguments that Ngemba topics are base-generated in the topic position. Section 4, discusses what recent theories of resumption would have to say about the empirical puzzle from Ngemba, and presents the proposal. In Section 5, I make a detour to closely-related Medumba, with the aim to propose a possible derivation of the same type of asymmetry in a movement dependency. Section 6 concludes.

3 Topicalization in Ngemba is base-generation

In this section, I apply four movement tests to the Ngemba topicalization data to demonstrate that they involve base-generation, but not movement. These are (a) sensitivity to islands, (b) idiom reconstruction effects, (c) strong cross-over effects and (d) tonal reflexes of movement. I discuss them in turn below.

3.1 Island-sensitivity

In Ngemba, it is perfectly fine to topicalize out of islands. The examples in (13) show this for relative clause islands, and those in (14), for adjunct islands. In (13-a), the animate XP *mə̀ndʒwí ø-è* 'that woman' is topicalized, and a resumptive pronoun must feature inside the relative clause. One may think that resumptive pronouns repair islands in Ngemba, but (13-b) and (14-b) show that this is not the case, as the absence of a resumptive pronoun is the only grammatical option, if the topic XP is inanimate. The examples in (13-b) and (14-b) also show that the requirement for gaps with inanimate objects remains constant even for islands.

(13)   a.   mə̀ndʒwí ø-è   á,   [ø-dídɔ̀ŋ ø-è   zhò   *(**ní**)   a]ᵣc   rò
             1.woman 1-DEM TOP, 1-man   1-REL see.PST 3SG.AN.ACC DET leave.PST
             Lit: 'As for that woman, the man who saw her left.'

       b.   ø-ndə́   ø-è   á,   [ø-dídɔ̀ŋ ø-è   kùt   (*zhé) a]ᵣc   rò
             1-house 1-DEM TOP, 1-man   1-REL build.PST 3.INAN DET leave.PST
             Lit: 'As for that house, the man who built it left.'

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[7] I am particularly grateful to one of the anonymous reviewers for bringing this solution to my attention.

(14) a. mə̀ndʒwí ø-è   á,   Fotsing lè   [ndìèʔ Mbah zhò *(**ní**)   a]_{WH}

1.woman 1-DEM TOP, Fotsing cry.PST when Mbah see 3SG.AN.ACC DET

Lit: 'As for that woman, Fotsing cried when Mbah saw her.'

      b. ø-ndə́ ø-è   á,   Fotsing lè   [ndìèʔ ø-məttwà tyàm (***zhé**) a]_{WH}

1-house 1-DEM TOP, Fotsing cry.PST when 1-car   hit.PST 3.INAN DET

Lit: 'As for that house, Fotsing cried when the car hit it.'

Island types are not universal (see, for example, Scott 2021 and Georgi & Amaechi 2023 for related discussions, based on Swahili and Igbo data), and one may argue that relative clauses and adjuncts are not 'true' islands in Ngemba. Evidence that they are indeed true islands comes from exhaustive focus marking. Exhaustive focus in Ngemba is achieved by means of the focus marker *á* that precedes the focused XP. (15-a) illustrates subject XP focus, and (15-b): object XP focus.

(15) a. á   Fotsing pèè   nə ŋkàp Deffo

FOC Fotsing take.PST PRT money Deffo

'FOTSING, and no other person, took Deffo's money.'

      b. á   ŋkàp Deffo n-è   Fotsing pèè   a

FOC money Deffo 1-REL Fotsing take.PST DET

'It is DEFFO'S MONEY, and nothing else, that Fotsing took.'

Ngemba also displays a striking asymmetry in morphologically-marked focus constructions. While object focus (c.f., (15-b)) requires the presence of a relative clause and a clause-final determiner-like particle, subject focus does not (c.f., (15-a)).[8] What this means for what follows is (a), the examples in (16) and (17) probably involve two islands: the first being the one from which extraction applies (relative clauses (16), and adjunct clauses (17)), and the second being the one that focus would create); and (b) the morphologically-marked focus examples I use throughout the paper feature a relative clause, since I am interested in object XPs, and object XP focus requires a relative clause. While extraction from relative and adjunct clauses is possible with topicalization, it is ungrammatical with focus. This suggests that focus involves movement and

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[8] Morphologically-unmarked focus is achieved in-situ, and conveys new information. They generally are answers to wh-questions. Below are a few examples. The object focus construction in (i-b) is the answer to the wh-question in (i-a).

(i) a. Mbàʔ zhú   kɔ̀?

1Mbah buy.PST what

'What did Mbah buy?'

    b. Mbàʔ zhú   kə̀ndɔ̀ŋ

1Mbah buy.PST 1plantain

'Mbah bought PLANTAINS.'

not base-generation. The presence or absence of the resumptive pronoun in (16) and (17) does not affect grammaticality in any way. This rules out the possibility that resumptive pronouns might repair certain islands violations for focus.

(16) a. *á   [mə̀ndʒwí ø-è]ᵢ   [ø-dídɔ̀ŋ ø-è   cwáà   (**ní**)ᵢ   a]_RC rò
        FOC 1.woman 1-DEM 1-man   1-REL beat.PST 3SG.AN.ACC DET leave.PST
        Lit: 'THAT WOMAN the man who beat (her) left.'

    b. *á   [ø-ndɔ́   ø-è]ᵢ   [ø-dídɔ̀ŋ ø-è   kúùt   (**zhé**)ᵢ a]_RC rò
        FOC 1-house 1-DEM 1-man   1-REL build.PST 3.INAN DET leave.PST
        Lit: 'THAT HOUSE the man who built (it) left.'

(17) a. *á   [mə̀ndʒwí ø-è]ᵢ   Fotsing lὲ   [ndìèʔ Mbah cwáà (**ní**)ᵢ   a]_WH
        FOC 1.woman 1-DEM Fotsing cry.PST when   Mbah beat 3SG.AN.ACC DET
        Lit: 'THAT WOMAN Fotsing cried when Mbah was beating (her).'

    b. *á   [ø-ndɔ́   ø-è]ᵢ   Fotsing lὲ   [ndìèʔ ø-məttwà tyáàm (**zhé**)ᵢ a]_WH
        FOC 1-house 1-DEM Fotsing cry.PST when   1-car   hit.PST 3.INAN DET
        Lit: 'THAT HOUSE Fotsing cried when the car hit (it).'

The examples in (16) and (17) provide evidence that topicalization, but not focus, involves base-generation. This conclusion is strengthened by three other tests.

3.2 Idiom reconstruction effects

The basic assumption underlying this test is that idioms keep their meaning if part of it is extracted, but lose it if what looks to be part of it is base-generated in a different position (see, for example, Scott 2021; Georgi & Amaechi 2023; Yip & Ahenkorah 2023 for similar applications of this diagnostic). Applying this test to topicalization in Ngemba shows that the idiomatic meaning is lost if part of the idiom gets topicalized. Below, I show this with the idiom *ŋwɔ́ʔ shwò* (literally 'bend mouth') which, in Ngemba, means 'to be angry'. *shwò*, in (18-b), can undergo topicalization, in which case the only possible reading is one that does not involve being angry, but rather the state of the mouth (bent).

(18) a. Deffo tsɔ́k   lià?   ŋwɔ́ʔ shwò
        Deffo spend.PST today bend   mouth
        ✔**Lit**. Deffo bent his mouth the whole day.'
        ✔**Idiom**. 'Deffo was angry the whole day.'

    b. shw-ò á,   Deffo tsɔ́k   lià?   ŋwɔ́ʔ
        mouth TOP, Deffo spend.PST today bend
        ✔**Lit**. 'As for his mouth, Deffo spent the day bending it.'
        ✘**Idiom**. 'As for getting angry, Deffo spent the day angry.'

Comparing this with focus (19) confirms that, unlike topicalization, it involves movement. This is so because when *shwò* 'mouth' is focused, the idiomatic reading is maintained. Under a movement approach, the moved item can be reconstructed for interpretation (whether this involves interpretation of a silent copy is not important). Importantly, this is not an option for base-generation.

(19) á   shwò ø-è   ì   tsɔ̀k   lià?   ŋwɔ̀ʔ a
      FOC mouth 1-REL 1SG.NOM spend.PST today bend   DET
      ✔**Lit**. 'It is the mouth that he spent the day bending.'
      ✔**Idiom**. 'It is anger that he showed the whole day.'

3.3 Strong cross-over

The empirical data also show that topicalization in Ngemba does not reconstruct for Principle C. The gist of Principle C is that R-expressions must be free. This relates to movement in the sense that A-bar traces are interpreted as R-expressions, which cannot be bound. To illustrate this, consider the English examples in (20-a) and (20-b).

(20) a. *Who$_i$ did he$_i$ see _?
      b. *Who$_i$ does he$_i$ think you saw _?

In (20), the wh-trace (the position after the verb) is c-commanded by the pronoun *he*, hence both can be bound. The ungrammaticality of the examples in (20) is accounted for by the fact the moved wh-phrases and their traces are identical. The trace is bound by the pronoun, and so is the wh-phrase. This violates Principle C. The examples in (20) would be grammatical, if the wh-trace, hence the wh-phrase, were free, i.e., not coindexed to the 3rd person pronoun 'he'. In Ngemba, object wh-phrases behave exactly like in English. Below are the Ngemba equivalents of the examples in (20).

(21) a. *á   wɔ́$_i$ ø-è   í$_i$ zhóò   _   a?
          FOC who 1-REL he see.PST WH-TRACE DET
          '*Who$_i$ did he$_i$ see?'
      b. *á   wɔ́$_i$ ø-è   í$_i$ kwàŋ ŋgə ɔ́ zhóò   _   a?
          FOC who 1-REL he think that you see.PST WH-TRACE DET
          '*Who$_i$ does he$_i$ think that you saw?'

In (21-a), for example, the 3rd person singular pronoun *í* is coindexed to the trace of the wh-element, hence the ungrammaticality. This sentence would be grammatical, if the wh-trace, hence the wh-element, were free.

As far as topicalization is concerned, the matrix subject in (22-a) cannot be co-indexed to *Fotsing* and *Deffo* because this would lead to a Principle C violation. If *Deffo* is topicalized, co-reference with the 3sg pronoun *î* and the resumptive pronoun *ní* becomes possible. This suggests that the XP *Deffo* does not originate in the c-command domain of the matrix subject and provides evidence that topicalization of *Deffo* involves base-generation. There are no traces, otherwise, a silent copy of *Deffo* would be c-commanded by the matrix subject pronoun.

(22) a. î   ntɔ́   ŋgə Fotsing zhó   Deffo
          3SG.NOM think that Fotsing see.PST Deffo
          'He thinks that Fotsing saw Deffo.'

      b. Deffo á,   î   ntɔ́   ŋgə Fotsing zhó   ***ní**
          Deffo TOP, 3SG.AN.NOM think that Fotsing see.PST 3SG.AN.ACC
          'As for x, ✔x/✔y thinks that Fotsing saw x.'

If *Deffo* had moved and crossed the 3rd person pronoun *î*, binding would have been impossible. This is exactly what happens if *Deffo* is focused (23).

(23) á   Deffo n-è î   ntɔ́   ŋgə Fotsing zhóò   ***ní**   a
      FOC Deffo 5-REL 3SG.NOM think that Fotsing see.PST 3SG.AN.ACC DET
      'It is x, such that ✘x/✔y thinks that Fotsing saw x.'

3.4 Tonal reflexes of movement

Tone changes have also be shown to be reflexes of movement in, for example, Asante Twi (Korsah & Murphy 2020), Medumba (Keupdjio 2020) and Igbo (Georgi & Amaechi 2023). In Igbo, for example, the final tone of a subject becomes high if it is crossed over (see Georgi & Amaechi 2023, and references therein). In (24-a), for example, the subject DP *Ézè* has a low tone on the final vowel. When the object DP *Àdá* is focused, it can appear in the Igbo left periphery, and be followed by the focus marker *kà*. When this happens, the final tone of the subject changes to high (24-b). This tone change does not affect the subject in the topicalization example in (24-c). This has been used as evidence that while object DP focus in (24-b) involves focus, object topicalization in (24-c) does not (see Georgi & Amaechi 2023 for the relevant details).

(24) a. **Ézè** hừ-rừ Àdá
          Eze see-rV Ada
          'Eze saw Ada.'

      b. Àdá kà   **Ézé** hừ-rừ
          Ada FOC Eze see-rV
          'Eze saw ADA.'

    c.   Àdá, **Ézè** hὺ̀-rὺ̀ yá
        Ada Eze see-rV 3SG.ACC
        'As for Ada, Eze saw her.'   (*Igbo*: Georgi & Amaechi 2023: 966)

The fact that the low tone of the subject DP *Ézè* changes to high in (24-b), shows that the object DP *Àdá* has moved across it. The absence of this tone change in (24-c) indicates that *Àdá* is base-generated in the topic position.

    This type of effects has also been reported in the Grassfields Bantu language Medumba (Keupdjio 2020), which is closely related to Ngemba. In Medumba, the verbal root *kέ* 'choose', for example, has a low tone in non-movement contexts (25).

(25)   Nὺ$^{\eta}$gὲέ **kὲ**   kí
       Nuga   choose C.Q$_{Y/N}$
       'Did Nuga choose?'   (*Medumba*: Keupdjio 2020: 111)

In ex-situ object wh-questions (26-a), focus (26-b) and topicalization (26-c), the last vowel of this verb is lengthened, and its low tone becomes a falling tone.[9]

(26)   a.   á   wύ Nùŋgὲ **kέὲ**   á
           FOC WH Nuga AGR.choose C.Q.H
           'who did Nuga choose?'   (*Medumba*: Keupdjio 2020: 111)
    b.   á $^{\eta}$gùn Nùŋgὲ **kέὲ**   lá
           FOC girl Nuga AGR.choose C.H
           'The girl$_{FOC}$ (is the one) Nuga chose.'   (*Medumba*: Keupdjio 2020: 111)
    c. $^{\eta}$gùn júὺn-ní   kí, Nùŋgὲ **kέὲ**   í
           girl AGR-DEM TOP Nuga AGR.choose 3SG.ANIM
           'This girl, Nuga chose her.'   (*Medumba*: Keupdjio 2020: 113)

This, coupled with other tests, has been used as evidence that the object DPs in (26) have moved across this verb into the surface positions in which they appear. In the absence of movement, these changes do not take place (25).

    Ngemba verbs also behave this way and, as such, this can be taken as a test for movement in the language as well. In a simple declarative sentence such as (27), the verbal root *zhó* 'see' appears with a high tone.

(27)   Fotsing **zhó**   Deffo
       Fotsing see.PST Deffo
       'Fotsing saw Deffo.'

---

[9] Keupdjio (2020) refers to these changes as indicative of A-bar agreement.

In the object focus example in (28), the last vowel of this verb is lengthened, and the high tone is turned into a falling tone.

(28)　á　Deffo n-è　　Fotsing **zhóò**　a
　　　FOC Deffo 5-REL Fotsing see.PST DET
　　　'It is DEFFO that Fotsing saw.'

What is striking about topicalization is that this tone change does not take place (29).

(29)　Deffo á,　　Fotsing **zhó**　　ní
　　　Deffo TOP, Fotsing see.PST 3SG.ANIM.ACC
　　　'As for Deffo, Fotsing saw him.'

These facts, coupled with the three other tests I have presented in this section, provide evidence that topicalization in Ngemba involves base-generation of an XP in the topic position and binding of a resumptive pronoun. Focus, however, involves movement to the left periphery of the Ngemba clause.

3.5 Interim conclusion

This section has provided empirical evidence that while Ngemba object topics are base-generated in the topic position, morphologically-marked object foci are moved to the focus position. Despite the fact that such topics are base-generated, inanimate object XPs are resumed by a gap, this notwithstanding the existence of a corresponding pronoun. In current approaches to pronoun copying and resumption, gaps are closely tied to movement, and are derived from movement and chain reduction (see, e.g., van Urk 2018). They are less expected in base-generation dependencies because they have been claimed to involve binding (see McCloskey 2006 for discussions). What is interesting about the Ngemba data is that there is a corresponding inanimate object pronoun, but its use with regular inanimate object topics is ungrammatical. The question then is how do we account for such an asymmetry. If base-generation dependencies can also feature gaps, despite the existence of a corresponding RP, then we need a theory which does not rely on copy-deletion.

In the section that follows, I propose one to account for the Ngemba data. This relies on the notion of Obliteration. I argue that the absence of RPs with inanimate objects results from an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others. I propose that this rule is structurally constrained by sisterhood to V, such that it fails to apply to members of a conjunct because they are inside a &P. If the analysis is correct, then the paper strengthens the theoretical observation that impoverishment rules are (and need to be) featurally (Nevins 2011; Arregi & Nevins 2012; Keine & Müller 2020, among others) and structurally (Kallulli & Trommer 2011; Bobaljik 2012; Božič 2020; Fongang 2024) constrained.

4 The proposal

This section proposes an account of the asymmetry between subject and object resumptive pronouns in Ngemba. As a reminder from Section 2, Ngemba subject topics are always resumed. Object topics, however, can only be resumed if the topic XP is animate. If it is inanimate, the presence of a resumptive pronoun is ungrammatical, unless the topic XP is a member of a conjunct (&P). In this section, I analyse these sets of facts. But before I do so, let's look into copy-deletion approaches in detail.

4.1 On copy-deletion approaches

Section 3 has demonstrated that Ngemba topics are base-generated. What this means for recent approaches to pronoun copying and resumption such as van Urk (2018), Scott (2021), Georgi & Amaechi (2023) and Yip & Ahenkorah (2023), for example, is that the observed asymmetry in Ngemba cannot be thought of as movement and chain reduction which leads to partial deletion in one case (animate objects, inanimate subjects and objects in &Ps) and full deletion in the other (regular inanimate objects). What these approaches have in common is that the chain reduction algorithm they all assume is triggered by *economy*, which, in their system, only applies if two or more full copies of an XP are present in the derivation of a sentence at some point. This clearly presupposes that the relationship between copies in such dependencies is tied to movement.

In copy-deletion approaches to resumption, the head (the moved XP) and its copies are identical. Following Landau (2006), van Urk (2018); Scott (2021); Georgi & Amaechi (2023) and Yip & Ahenkorah (2023) argue that *economy* forces deletion of parts (or all) of the structure of the copies, yielding resumptive pronouns (or gaps). What this presupposes is that the algorithm may fully or partially delete the structure of members of the movement chain. If it deletes everything, then we are left with a gap. If is does not and there is a pronoun that is compatible for insertion (given the phi and case features that are present in the structure that remains), it will be inserted. The locus of features and the amount of structure that gets deleted can, as a consequence, create non-matching or partially matching RPs. This was proposed by van Urk (2018) to account for the intricacies of pronoun copying in Dinka Bor, and has been used to derive resumption in Swahili (Scott 2021), Cantonese and Akan (Yip & Ahenkorah 2023), and Igbo (Georgi & Amaechi 2023). The major difference between these studies is what counts as a deletion domain. In van Urk (2018), deletion targets phases, and nP and KP are phase boundaries (in, at least, Dinka Bor). In Scott (2021) and Georgi & Amaechi (2023), the deletion domain is dynamic, and is conditioned by MaxElide (c.f., Landau 2006) which, in turn, obeys language-specific constraints.

In Dinka Bor (Nilotic, South Sudan), for example, long-distance movement of a plural DP leaves behind the plural pronoun *ké* in all the positions the XP transits through on its way up, as (30) shows.

(30) Yè **tọ̣ny ké díi** [_CP_ yá [_VP_ **ké** luêeel [_CP_ ẹ̀ cị́i Bôl [_VP_ **kê** cuị̣in
be.3SG pots many how be.2SG 3PL say.NF C PRF.OV Bol.GEN 3PL food
thàal]]]]?
cook.NF
'How many pots do you say that Bol has cooked food with?'

(*Dinka Bor*: van Urk 2018: 943)

van Urk (2018) argues that the moved XP *tọ̣ny ké díi* 'how many pots' in (30), leaves full copies in every intermediate movement steps. These copies are then subject to a deletion algorithm that produces the *ké*. What is interesting about Dinka Bor, van Urk (2018) shows, is that a second person plural topic pronoun will also be copied by *ké*, as illustrated in (31).

(31) **Wêek** cị́i Àyèn [_VP_ **ké** tị̂iŋ].
2PL PRF.OV Ayen.GEN 3PL see.NF
'You All, Ayen has seen.' (*Dinka Bor*: van Urk 2018: 973)

Example (31) also shows that there is a person mismatch between the topic pronoun and its copy in the movement site. A second-person topic pronoun is copied by a third-person pronoun. van Urk (2018) argues that *ké* is unmarked for person features, and its structure is as illustrated in (32). Person features are located on the *n* head, and the structure of the second-person plural pronoun *Wêek* is given in (33).

(32) Structure of *ké*

```
        KP
       /  \
      K    NumP
          /  \
        nP    Num
            [plural]
```
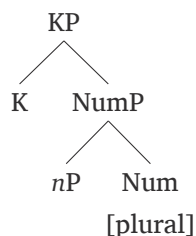
(33) Structure of *Wêek*

```
        KP
       /  \
      K    NumP
          /  \
        nP    Num
        [2]  [plural]
```
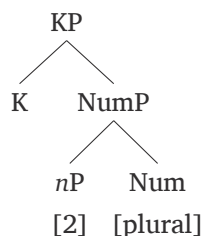
When *Wêek* undergoes topicalization (which involves movement in Dinka Bor) in (31), it leaves a full copy in the movement site. The moved pronoun and its copy have the structural representation in (33). *Economy* then forces partial deletion of the structure of the lower copy, i.e., the copy in the movement site. van Urk (2018) argues that phasehood decides the amount of structure that can be deleted. In Dinka Bor, the relevant phase-defining heads are *n* and K. In deriving the presence of *ké* in (31), he proposes that *n*P gets deleted. Since its head *n* hosts person features, the resulting structure corresponds to that of *ké*. As a result, the second-person pronoun topic is copied by *ké*.

van Urk (2018) also discusses how a structure-deletion algorithm can create a gap in the movement site. One of the options he envisages, and which is modelled on the idea that phase-defining heads are *n* and K in Dinka Bor, is to assume that the deletion operation targets KP, such that the whole structure is deleted. The result would be a gap. The other plausible option is that the amount of structure that remains after deletion has applied does not correspond to any pronoun in the language. The system, therefore, prefers a gap in the movement site.

The crucial assumption about copy-deletion approaches is that movement must be involved, such that we get a chain with identical copies. Otherwise, there will be no need to invoke *Economy of Pronunciation* (34), which is the driving force for the deletion algorithm.

(34)   *Economy of Pronunciation*:
        Delete all chain copies at PF up to P-recoverability.   (Landau 2006: 30)

In base-generation dependencies, Scott (2021) and Georgi & Amaechi (2023) follow McCloskey (2006) in assuming that the relationship between the antecedent and the resumptive pronoun is established by binding, and it is not the case that binding always produces identical copies, such that (34) could be said to be at work in base-generation dependencies as well. If van Urk (2018), Scott (2021), Georgi & Amaechi (2023) and Yip & Ahenkorah (2023) are correct, then how do we account for the absence of a pronoun in regular inanimate object topicalization in Ngemba, despite the existence of a corresponding RP? The logic of their proposal would imply that (a) binding always takes place, but there is no pronoun that can be inserted, (b) binding always takes place, but the features are impoverished in the post-syntax, or (c) binding can be bled, hence no resumptive pronoun. (a) is ruled out by example (8-b), repeated as (35). It shows that there is, after all, a pronoun that can be inserted in inanimate object contexts.

(35)   ø-mbáŋ á,   ø-pǔsì zhó   *(zhé) pàà ø-kwɔ̀?
        1-pot   TOP, 1-cat see.PST 3.INAN and 1-chair
        'As for the pot, the cat saw it and the chair.'

(b) suggests an impoverishment rule that can partially or fully delete the features in the pronoun position after binding has taken place in the syntax. While full deletion would lead to a gap (regular inanimate object contexts), partial deletion would lead to the insertion of a pronoun that lacks certain features. For (c), one needs to first provide reasons why binding would be bled. Besides, (c) would face the complication that it is unclear how the antecedent-pronoun relationship is established, if binding fails to take place.

I will adopt (b), and claim that the absence of an RP in inanimate object XP topicalization results from an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others. I propose that this rule is structurally constrained by sisterhood to V, such that it fails to apply to members of a conjunct because they are inside a &P.[10] I sketch this out in the next section.

4.2 Deriving the gap in inanimate object XP topicalization

In this section, I discuss details of the proposal that derives the asymmetry I am interested in. Section 3 has provided arguments that the dependency between the topic XP and the resumptive pronoun in Ngemba is not a movement dependency. The literature suggests that RPs in such contexts are linked to topic XPs by means of a binding operation in the syntax (McCloskey 2006; Scott 2021; Georgi & Amaechi 2023). The question then is: if binding always takes place, given that the dependency must be established, how do we end up having syncretic RPs in some contexts, and no RPs in others (even though an RP is available for insertion)? This section provides an answer to this question. I show that while syncretic RPs are derived by underspecification of vocabulary items, the absence of RPs is the result of an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others, prior to vocabulary insertion. This rule bleeds vocabulary insertion, hence the gap. Since Impoverishment rules apply on the PF side (c.f., Keine & Müller 2020, for an overview), this does not affect the semantics of binding in any ways. I propose that this rule is structurally constrained by sisterhood to V, such that it fails to apply to members of a conjunct because they are inside a &P.

I take binding to involve an Agree operation through which the features of the binder are transferred onto the bindee (see also Kratzer 2009; Wurmbrand 2017; Stegovec 2020).[11] This requirement is formalized as in (36).

---

[10] Other proposals have been made in the literature on how to derive certain types of resumptive pronouns (see for example, (Korsah & Murphy 2020; Hein & Georgi 2021)). They, however, still rely on movement. Besides, (Hein & Georgi 2021) would need the speculation that animate objects are DPs, and inanimate objects: NPs. For these reasons, I think these proposals cannot be straightforwardly extended to the topicalization data from Ngemba.

[11] I thank one of the anonymous reviewers for suggesting the relevant literature.

(36)   *Binding*

Binding of α by β involves agreement and feature transfer from β to α.

Agreement, I assume, is upward (c.f., Bjorkman & Zeijlstra 2019, among others), such that the heads that spell out RPs have unvalued features which values they get from the relevant topics. The binding operation in both object and subject contexts is schematized in (37) and (38), respectively. Feature checking is upward. The RPs need to be bound by the topics XPs, hence valuation is downward.[12]

(37)   Binding in object contexts

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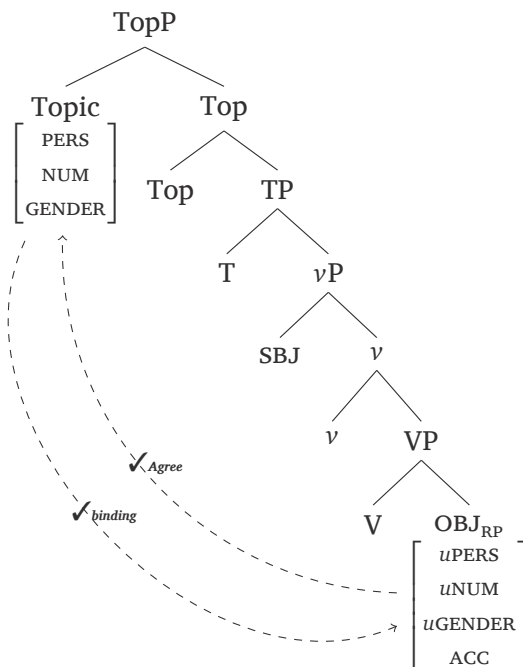
[12] One would, given the tree in (37) expect that the probe in the pronoun position never sees the features of the topic XP, because the subject XP intervenes between both. One way out would be to propose that the subject XP is not a compatible goal because subjects and objects have different case features. In technical terms, the probe in (37) is in object position and wants a DP with [ACC] (or no case at all). The subject XP, however, is specified for [NOM] case, hence is skipped by the probe. The XP in the topic position, does not have case information, hence is a better goal than the subject.

The other solution, which was suggested by one of the anonymous reviewers, is to claim that pronouns also probe for topic features, and only the topicalized phrase can check this feature off. Intervening subjects cannot and, as a result, are ignored.

(38)   Binding in subject contexts
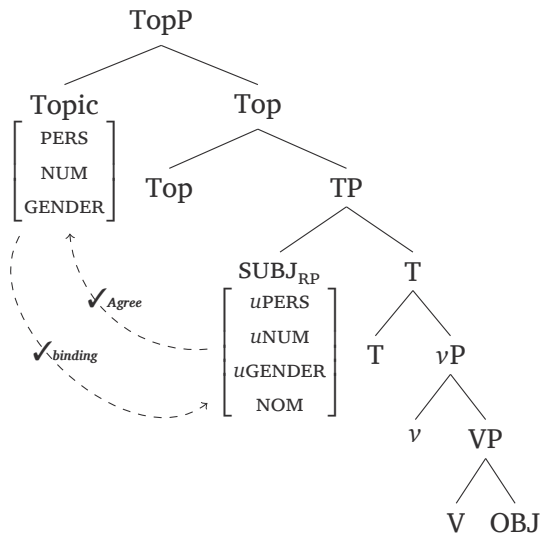
The complete list of vocabulary items, following **Table 1**, repeated as **Table 2** below, is given in (39)–(41).

	1SG	2SG	3SG.AN	3SG.INAN	1PL	2PL	3PL.AN	3PL.INAN
NOM	mə́	ɔ́	**í**	**á**	pə̀ə̀k	pùù	**wóp**	**á**
ACC	ná	nɔ́	**ní**	**zhé**	wə́k	wú	**wóp**	**zhé**
OBL	mmò	wwɔ̀	zhìə́	**zhé**	pə̀k	pù	pó	**zhé**

Table 2: Personal pronouns in Ngemba.

(39)   Nominative pronouns

   a.   /mə́/ ↔ [1, sg, nom]

   b.   /ɔ́/ ↔ [2, sg, nom]

   c.   /í/ ↔ [3, sg, animate, nom]

   d.   /á/ ↔ [3, inanimate, nom]

   e.   /pə̀ə̀k/ ↔ [1, pl, nom]

   f.   /pùù/ ↔ [2, pl, nom]

   g.   /wóp/ ↔ [3, pl, animate]

(40) Accusative pronouns

    a. /ná/ ↔ [1, sg, acc]

    b. /nɔ́/ ↔ [2, sg, acc]

    c. /zhé/ ↔ [3, inanimate]

    d. /wə́k/ ↔ [1, pl, acc]

    e. /wú/ ↔ [2, pl, acc]

(41) Oblique pronouns

    a. /mmò/ ↔ [1, sg, obl]

    b. /wwɔ̀/ ↔ [2, sg, obl]

    c. /zhìə́/ ↔ [3, sg, animate, obl]

    d. /pə̀k/ ↔ [1, pl, obl]

    e. /pù/ ↔ [2, pl, obl]

    f. /pó/ ↔ [3, pl, animate, obl]

As the vocabulary items in (39) show, the syncretisms in **Table 2** are captured via underspecification. The nominative pronoun *á*, for example, is underspecified for number features and, as a consequence, can appear in both singular and plural contexts. /zhé/ can be inserted in all 3rd person inanimate contexts. It is the only compatible VI in the accusative and the oblique. In the nominative, /zhé/ and /á/ are compatible for insertion, but /á/ is more specific (it has the feature [nom]), hence is inserted.

    After binding, the terminal nodes that vocabulary-insertion rules would refer to in subject contexts look like (44)–(47). Vocabulary insertion is constrained by the Subset Principle (see Halle 1997, amongst others).

(42) *Subset Principle*

    A vocabulary item *V* is inserted into a functional morpheme M iff (a) and (b) hold:

    a. The morpho-syntactic features of *V* are a subset of the morphosyntactic features of *M*.

    b. *V* is the most specific vocabulary item that satisfies (a).   (Müller 2004: 9)

I adopt the definition of specificity in (43), from Müller (2004).

(43) *Specificity of vocabulary items:*

    A vocabulary item V_i is more specific than a vocabulary item V_j iff there is a class of features F such that (i) and (ii) hold.

   (i) V_i bears more features belonging to F than V_j does.

    (ii) There is no higher-ranked class of features F' such that V_i and V_j have a different number of features in F'.   (Müller 2004: 9–10)

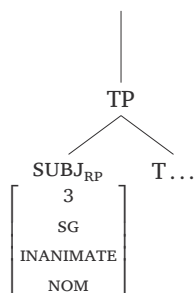(44) Spell-out of RPs in singular animate subject contexts

TP
SUBJ_RP   T...
$\begin{bmatrix} 3 \\ \text{SG} \\ \text{ANIMATE} \\ \text{NOM} \end{bmatrix}$
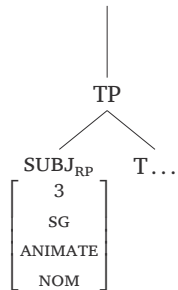
a. ✔ /í/ ↔ [3, sg, animate, nom]
b. ✘ /ní/ ↔ [3, sg, animate, acc]
c. ✘ /á/ ↔ [3, inanimate, nom]
d. ✘ /zhé/ ↔ [3, inanimate]
e. ✘ /wóp/ ↔ [3, pl, animate]

(45) Spell-out of RPs in plural animate subject contexts

TP
SUBJ_RP   T...
$\begin{bmatrix} 3 \\ \text{PL} \\ \text{ANIMATE} \\ \text{NOM} \end{bmatrix}$
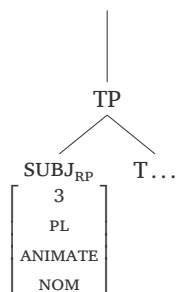
a. ✘ /í/ ↔ [3, sg, animate, nom]
b. ✘ /ní/ ↔ [3, sg, animate, acc]
c. ✘ /á/ ↔ [3, inanimate, nom]
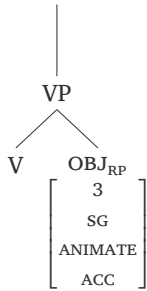d. ✘ /zhé/ ↔ [3, inanimate]
e. ✔ /wóp/ ↔ [3, pl, animate]

(46) Spell-out of RPs in singular inanimate subject contexts

TP
SUBJ_RP   T...
$\begin{bmatrix} 3 \\ \text{SG} \\ \text{INANIMATE} \\ \text{NOM} \end{bmatrix}$

a. ✘ /í/ ↔ [3, sg, animate, nom]
b. ✘ /ní/ ↔ [3, sg, animate, acc]
c. ✔ /á/ ↔ [3, inanimate, nom]
d. ✘ /zhé/ ↔ [3, inanimate]
e. ✘ /wóp/ ↔ [3, pl, animate]

(47) Spell-out of RPs in plural inanimate subject contexts

TP
SUBJ_RP   T...
$\begin{bmatrix} 3 \\ \text{PL} \\ \text{INANIMATE} \\ \text{NOM} \end{bmatrix}$
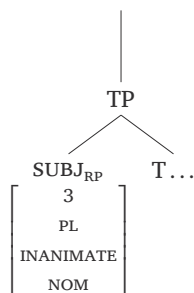
a. ✘ /í/ ↔ [3, sg, animate, nom]
b. ✘ /ní/ ↔ [3, sg, animate, acc]
c. ✔ /á/ ↔ [3, inanimate, nom]
d. ✘ /zhé/ ↔ [3, inanimate]
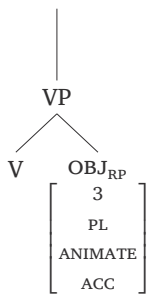e. ✘ /wóp/ ↔ [3, pl, animate]

Overall, underspecification alone captures the behaviour of subject resumptive pronouns. In object contexts, vocabulary insertion works as in (48)–(51) below.

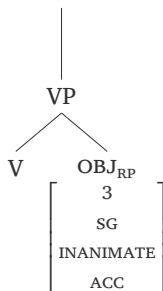(48) Spell-out of RPs in singular animate object contexts

```
        |
        VP
       /  \
      V   OBJ_RP
          ┌         ┐
          │    3    │
          │   SG    │
          │ ANIMATE │
          │   ACC   │
          └         ┘
```

a. ✗ /í/ ↔ [3, sg, animate, nom]
b. ✔ /ní/ ↔ [3, sg, animate, acc]
c. ✗ /á/ ↔ [3, inanimate, nom]
d. ✗ /zhé/ ↔ [3, inanimate]
e. ✗ /wóp/ ↔ [3, pl, animate]
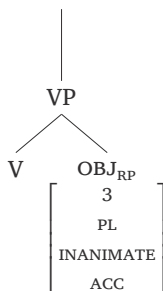
(49) Spell-out of RPs in plural animate object contexts

```
        |
        VP
       /  \
      V   OBJ_RP
          ┌         ┐
          │    3    │
          │   PL    │
          │ ANIMATE │
          │   ACC   │
          └         ┘
```

a. ✗ /í/ ↔ [3, sg, animate, nom]
b. ✗ /ní/ ↔ [3, sg, animate, acc]
c. ✗ /á/ ↔ [3, inanimate, nom]
d. ✗ /zhé/ ↔ [3, inanimate]
e. ✔ /wóp/ ↔ [3, pl, animate]

(50) Spell-out of RPs in singular inanimate object contexts

```
        |
        VP
       /  \
      V   OBJ_RP
          ┌           ┐
          │     3     │
          │    SG     │
          │ INANIMATE │
          │    ACC    │
          └           ┘
```

a. ✗ /í/ ↔ [3, sg, animate, nom]
b. ✗ /ní/ ↔ [3, sg, animate, acc]
c. ✗ /á/ ↔ [3, inanimate, nom]
d. ✔ /zhé/ ↔ [3, inanimate]
e. ✗ /wóp/ ↔ [3, pl, animate]

(51) Spell-out of RPs in singular inanimate object contexts

```
        |
        VP
       /  \
      V   OBJ_RP
          ┌           ┐
          │     3     │
          │    PL     │
          │ INANIMATE │
          │    ACC    │
          └           ┘
```

a. ✗ /í/ ↔ [3, sg, animate, nom]
b. ✗ /ní/ ↔ [3, sg, animate, acc]
c. ✗ /á/ ↔ [3, inanimate, nom]
d. ✔ /zhé/ ↔ [3, inanimate]
e. ✗ /wóp/ ↔ [3, pl, animate]

Unlike subjects, underspecification does not derive the fact that the inanimate object pronoun slot needs to be empty, unless the pronoun is the first member of a conjunct (c.f., (8-b)). What underspecification predicts is that *zhé* can resume all inanimate objects in the language. This prediction is not borne out, as illustrated in (7-b), repeated in (52-a). This example shows that the pronoun position must be left empty with inanimate objects. Another relevant examples is given in (52-b).

(52) a. ø-ndɔ́ á,   ø-pǔsì zhó   (***zhé**)
          1-house TOP, 1-cat see.PST 3.INAN
          'As for the house, the cat saw it.'
      b. mə-ndɔ́ á,   ø-pǔsì zhó   (***zhé**)
          6-house TOP, 1-cat see.PST 3.INAN
          'As for the houses, the cat saw them.'

To solve this problem, I propose that an Obliteration rule (Arregi & Nevins 2012) deletes the OBJ$_{RP}$ node when it has the features [TOP, INAN], among others. That the morphology can see and manipulate information-structure-related features such as [TOP] follows from Baier (2018) who, in his cross-linguistic account of anti-agreement effects, argues that such features can participate in morphological spell out and, importantly, trigger impoverishment rules (see also Ershova To appear). I propose that the [TOP] feature is passed onto the pronoun position via binding. This presupposes that the topicalized XP has a topic feature which it gets, I assume, from the topic marker before binding. In the course of feature transfer between the topic XP and the pronoun position, the topic XP is flagged for [TOP], and this feature is passed onto the pronoun position. It basically says 'I will be a pronoun from topicalization'. The node that spells out the pronoun is then deleted, if both [INAN] and [TOP] are present. This explains the fact that pronouns are required in regular pronoun use, since the topic feature is absent in such contexts. In technical terms, binding operates as in (37), repeated as (53). When the topic XP is base-generated in SpecToP, it is flagged [TOP] by the Top head. When the probes in the pronoun position look up to agree with the XP in SpecTopP, they share features. The result of this is that the terminal node in the pronoun position has φ-features, case features and [TOP]. Ngemba, I propose, has an obliteration rule that deletes the OBJ$_{RP}$ node if, both [inanimate] and [TOP] are on the same head. The terminal node that would, for example, be spelled out as an inanimate object pronoun in the plural is given in (54). The obliteration rule is presented in (55).

(53) Binding in object contexts
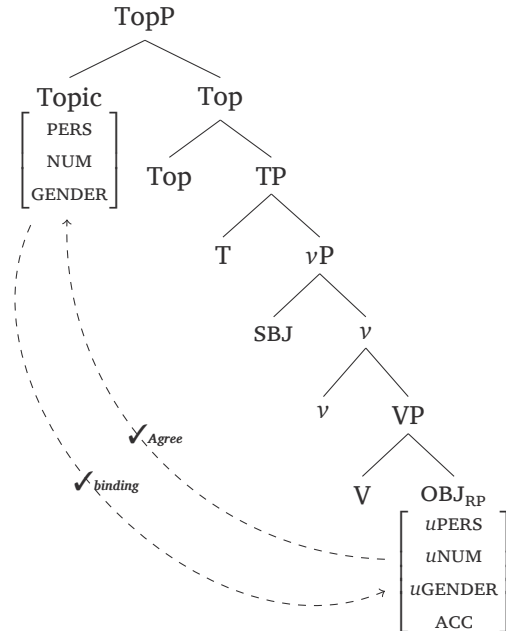
(54) Terminal node in inanimate object XP contexts
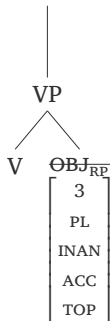
(55) *Ngemba Obliteration rule*
     an *OBJ*$_{RP}$ node → ø/ [TOP, INAN]

In (54), both [TOP] and [inanimate] appear on the *OBJ*$_{RP}$ node, thereby triggering the rule in (55). As a result of the deletion operation, the pronoun position is null.[13] This does not affect the semantics of binding because Impoverishment takes place on the PF side, hence does not affect the LF. The rule in (55) predicts that all inanimate object topics would not be resumed, contrary to fact. Members of &Ps must be resumed.

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[13] Assuming regular impoverishment of the feature [INAN] would produce the same result. The problem with this approach is that (a) it is unclear what the system does with the features that remain, and (b) if the node survives, it opens up the possibility that a default might be inserted. Obliteration does away with these two possible complications.

To account for the behaviour of conjuncts, I propose that the obliteration rule is structurally constrained by sisterhood to V, such that it fails to apply to conjuncts because they are inside a &P. These requirements, put together, are spelled out in (56).

(56)   *Ngemba Obliteration rule (revised version)*
        Delete an *OBJ$_{RP}$* node if it has the features [TOP, INAN], and if it is a sister to V.

Conjuncts are embedded in a &P, given the structure in (57). As (57) illustrates, the sister to V in conjuncts is not the 'OBJ$_{RP}$' node, but &P, and the pronoun position is inside &P.

(57)   Structure of &Ps
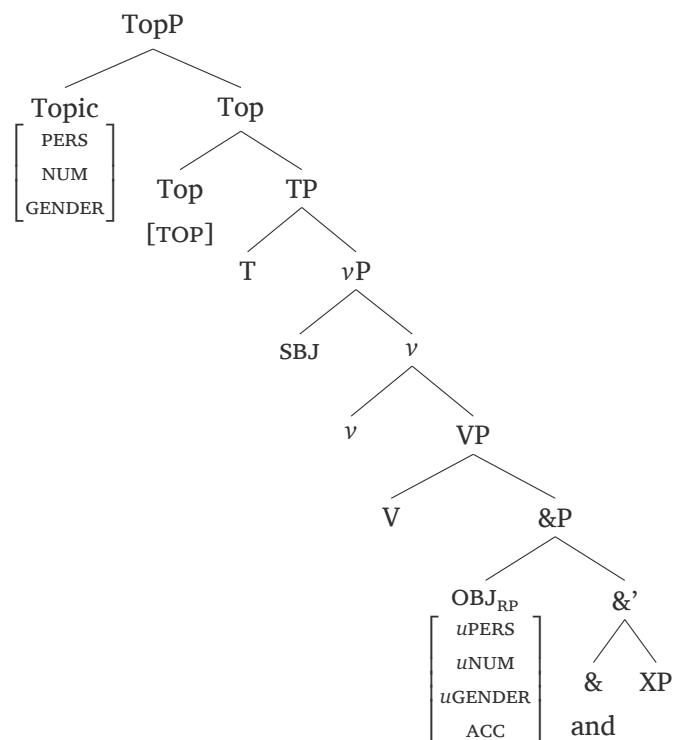
By proposing the requirement in (56), the paper also argues for a featural (Nevins 2011; Arregi & Nevins 2012; Keine & Müller 2020, among others), as well as structural (Kallulli & Trommer 2011; Bobaljik 2012; Božič 2020; Fongang 2024) constraint on Impoverishment. What is interesting about the structural restriction in (56) is that, under certain conditions, it is not in contradiction with one of the most recent (as far as I am aware of) proposal to structurally constrain impoverishment rules. In his account of syncretic patterns in the number contrasts of Ljubljana Slovenian, Božič (2020) proposes that Impoverishment must be locally constrained by the requirement in (58).

(58) *Strictly Local Impoverishment*
      Triggering context may be contained in (a) the X^0 targeted for Impoverishment, or (b) the closest X^0 that the target of Impoverishment c-commands.   (Božič 2020: 405)

What the restriction in (58) means is that the operation takes place if (a) the trigger and the target are on the same head X, or (b) the X-target immediately c-commands the X-trigger. Assuming that V is the trigger of the rule (it makes sense to do so, given the requirement for sisterhood in (56)), the target would be the OBJ_{RP} node. In non-conjunct contexts, V and OBJ_{RP} are in a symmetric c-command relation. The rule can apply because the target c-commands the trigger. In conjuncts, however, the target does not c-command the trigger V, hence the rule is bled. These sets of facts show that the requirement in (56) is not a strange one, as it can be rooted in previous proposals that derive facts from languages with no direct genetic relation to Ngemba.

5 A detour to Medumba: Comparing a chain-reduction approach to the obliteration account

Ngemba is not the only Grassfields Bantu language that shows animate/inanimate asymmetries in topicalization. Medumba, following Keupdjio (2020), also does. Below are a few examples. Unlike subject topics (59), which are always resumed, object topics (60) can only be resumed if the topic XP is animate (60-a). If it is inanimate, the resumptive pronoun position must be left empty (60-b).

(59) a. bú-bá-ⁿdʒùm   kí, *(**bú**)   ᵑkóò   bú-ùú-ⁱⁿʒʷí
          PL.child-PL-male TOP 3PL.AN.NOM N-AGR.like.HAB PL.child-persons-female
          'As for boys, they like girls.'   (*Medumba*: Keupdjio 2020: 347)
      b. sə́vʰə́ə́ tʰú-vúdl-í   kí, Nùgè tʃúùp   ᵐbʉ̀ *(**á**)   nɔ́ɔ̀   ᵐ-vʰʉ́ù
          piture head-body-3SG TOP Nuga AGR.say that 3SG.INAN.NOM AGR.AUX N-fall
          sí
          down
          'As for a picture of himself, Nuga said that it fell down.'
                                                             (*Medumba*: Keupdjio 2020: 349)

(60) a. bú-bá-ⁿdʒùm   kí, bú-ùú-ⁱⁿʒʷí   ᵑkóò   *(**júbə́**)/(*ø)
          PL.child-PL-male TOP PL.child-persons-female N-AGR.like.HAB 3PL.AN.ACC
          'As for boys, girls like them.'   (*Medumba*: Keupdjio 2020: 347)
      b. sə́vʰə́ə́ tʰú-vúdl-í   kí, Nùgè nɔ́ɔ̀   kə́ɛ̀   *(**ø**)/(*RP)
          piture head-body-3SG TOP Nuga AGR.AUX AGR.choose RES
          'As for a picture of himself, Nuga chose it.'   (*Medumba*: Keupdjio 2020: 349)

The examples in (61) further illustrate the absence of resumptive pronouns with inanimate objects in Medumba. Animate objects must be resumed (61-a). Inanimate objects, however, cannot ((61-b) and (61-c)).

(61) a. ᵑgùn júừn-ní   kí,   Nùŋgè kɛ́ɛ̀   *(í)/(*ø)
          girl AGR-DEM TOP Nuga AGR.choose 3SG.AN.ACC
          'As for this girl, Nuga chose her.'   (*Medumba*: Keupdjio 2020: 113)

      b. ⁿdʒʷɛ́n tʃúừn-ní kí   Nùŋgè kɛ́ɛ̀   *(ø)/(*RP)
          chips AGR-DEM TOP Nuga AGR.fry RES
          'As for these chips, Nuga fried them.'

      c. nà   júừn-ní   kí, Nùŋgè kɛ́ɛ̀k   *(ø)/(*RP)
          field AGR-DEM TOP Nuga AGR.weed RES
          'As for this field, Nuga weeded it.'   (*Medumba*: Keupdjio 2020: 114)
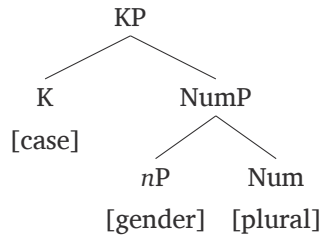
Keupdjio (2020) applies a bunch of tests to the Medumba data to show that *kí*-topicalization involves movement in this language. One of the evidence, which I also discuss in Section 3.4 of this paper, relates to tonal reflexes of movement in Medumba. All the verbs in the examples in (59)–(61) surface with a falling tone (single vowels of these verbs in declarative contexts has lengthened) which, according to Keupdjio (2020) indicates that some XP has moved across them. He refers to this a A-bar agreement (all the verbs are glossed AGR.*verb*). For more evidence that *kí*-topicalization indeed involves movement, the reader can refer to Keupdjio (2020).[14]

With these facts in mind, Ngemba and Medumba share the animate/inanimate asymmetry in topicalization. The two languages crucially differ in the way topicalization is derived. Section 3 of this paper provides empirical evidence that Ngemba topics are based-generated in the topic position. Keupdjio (2020) shows, extensively, that Medumba topics are derived by movement. Following recent theories of resumption (van Urk 2018; Scott 2021; Georgi & Amaechi 2023; Yip & Ahenkorah 2023), the Medumba data would, in principle, be best accounted for in a theory that assumes a structure-reduction algorithm. Given the discussion in Section 4.1, on how structure-deletion approaches derive gaps, one would, for example, assume that the structure of RPs in Medumba is as presented in (62), assuming that the nominal root has already been deleted. Case features are on K, number features on Num, and gender features on *n* (c.f., Kramer 2015 and Fuchs & van der Wal 2022 for arguments that gender features are on *n* in Bantu).

---

[14] Keupdjio (2020) uses the example in (59-b), repeated in (i), to show that *kí*-topicalization supports reconstruction, as the moved XP *sə́vʰə̀ə́ tʰú-vúdl-í* 'a picture of himself' can be coindexed with the subject RP in the embedded clause.
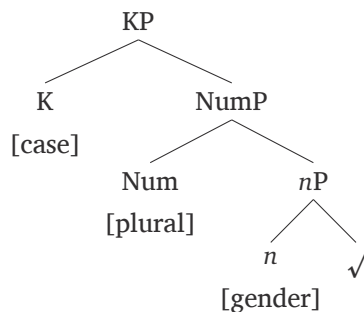
(i)   [sə́vʰə̀ə́ tʰú-vúdl-í]ⱼ   kí,   Nùgè tʃúừp   ᵐbừ *(á)ⱼ   nɔ́ɔ̀ʔ   ᵐ-vʰúừ sí
      piture   head-body-3SG TOP Nuga AGR.say that 3SG.INAN.NOM AGR.AUX N-fall down
      'As for a picture of himself, Nuga said that it fell down.'   (*Medumba*: Keupdjio 2020: 349)

(62) Structure of RPs in Medumba

```
              KP
           /      \
          K        NumP
        [case]    /    \
                 nP     Num
             [gender] [plural]
```
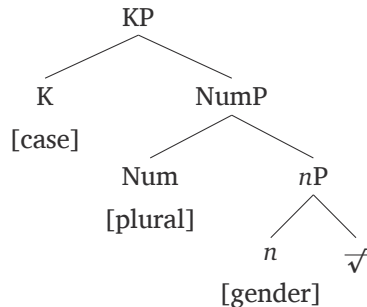
The gap would be created the same way as van Urk (2018) assumes for Dinka Bor. As a reminder from Section 4.1, he proposes that deletion targets phases, and *n* and K are phase heads in Dinka. If the lower phase is deleted, then we might expect a pronoun that does not fully match the antecedent in features. If, however, deletion targets a higher phase, namely KP, the result would be a gap (or a dummy pronoun?). I propose that deletion targets KP in Medumba. The next question then is why it only happens with inanimate object XPs. A structure-deletion account does not, as far as I can tell, provide a straightforward answer to this question. It in unclear to me how the deletion algorithm, which is triggered by *economy*, and further conditioned by phases would leave a gap in one case (inanimate objects), and RPs in others (animate objects).[15] One would have to assume that in animate contexts, it is *n*P (additional assumptions are needed to ensure that gender features escape deletion) that is deleted. In inanimate contexts, however, it can be KP or *n*P. When KP is deleted, the result is a gap. If, however, *n*P is deleted, an RP is inserted. But, how to we restrict KP-deletion to inanimate objects? The obliteration approach looks simpler in that the same requirement that applies to Ngemba would apply to Medumba. Members of movement chains are identical, hence share features, include [TOP]. The Medumba examples I have presented involve full DPs, hence the simplified structural representation in (63). When the full DP is topicalized, its copy has exactly the structure in (63). Structure-deletion applies first, and deletes the nominal root (64).

(63) DP structure

```
              KP
           /      \
          K        NumP
        [case]    /    \
                 Num    nP
              [plural] /  \
                      n    √
                   [gender]
```

---

(64)   The algorithm deletes the nominal root

```
                    KP
              ┌──────┴──────┐
              K            NumP
           [case]      ┌────┴────┐
                      Num        nP
                   [plural]    ┌──┴──┐
                              n      √
                           [gender]
```

The OBJ_RP node that has [TOP] and [INAN] is then obliterated, if it sister to V. The internal structure of OBJ_RP is given in (64), hence KP is obliterated. The result is the gap. Since I do not have enough data on Medumba pronouns, I will not dicuss this any further, and simply conclude that in accounting for the Medumba data, combining a chain-reduction and the obliteration account proposed here seems to be straightforward.

6 Conclusion

This paper discussed and analysed an interesting asymmetry in topicalization from the understudied Grassfields Bantu language Ngemba. Unlike subject topics, which are always resumed, object topics can only be resumed if the topic XP is animate. If it is inanimate, the presence of a resumptive pronoun is ungrammatical, unless this XP is a member of a conjunct (&P). The analysis has argued that the gap results from an Obliteration rule (Arregi & Nevins 2012) that deletes the OBJ_RP node when it has has the features [TOP, INAN], among others. That the morphology can see and manipulate information-structure-related features such as [TOP] follows from Baier (2018) who, in his cross-linguistic account of anti-agreement effects, argues that such features can participate in morphological spell out and, importantly, trigger Impoverishment (see also Ershova To appear). I proposed that the [TOP] feature is passed onto the pronoun position via Agree-related binding. This presupposes that the topicalized XP has a topic feature which it gets, I assumed, from the topic marker before binding. That binding, but not chain formation is involved, stems from the fact that topicalization in Ngemba involves base-generation, and not movement. Under this view, one prominent approach, which I adopted in this paper, is that the features of the antecedent are passed onto the pronoun position via binding (see, for example, McCloskey 2006). In the course of feature transfer between the topic XP and the pronoun position, the [TOP] feature is passed onto the pronoun position. The node that spells out the pronoun is then deleted, if both [INAN] and [TOP] are present. This explains the fact that pronouns are required in regular pronoun use, as the topic feature is absent in such contexts. To account for the behaviour of conjuncts, I proposed that the obliteration rule is structurally constrained by sisterhood to V, such that it fails to apply to subjects and conjuncts. This requirement, I showed, can be in line

with that argued for by Božič (2020). The paper therefore makes the following contributions to existing literature. Empirically, it shows that base-generation dependencies can feature a gap, despite the presence of a corresponding RP. Theoretically, it argues for an account of gaps in resumption that does not rely on copy deletion and further shows that Impoverishment rules are (and need to be) featurally (Nevins 2011; Arregi & Nevins 2012; Keine & Müller 2020, among others) and structurally (Kallulli & Trommer 2011; Bobaljik 2012; Božič 2020; Fongang 2024) constrained.

A detour to Medumba showed that this languages exhibits the same type of asymmetry as Ngemba, and that they differ in the way they are derived. While Ngemba topics are based-generated, Medumba topics involve movement. I showed the complications that a chain-reduction account may face in deriving the Medumba data, and proposed a theory that combines both chain-reduction and obliteration. The paper, under this view, also argues that what structure-reduction algorithms do for movement RPs in, for example, Swahili and Igbo, they do not easily do so for Medumba. If this is correct, then we need a broader theory of resumption.

Abbreviations

1SG/2SG/3SG = 1st/2nd/3rd person singular, 1PL/2PL/3PL = 1st/2nd/3rd person plural, 1/2/…15 = Bantu noun classes. ACC = accusative, AGR = agreement marker, AN = animate, C = complementizer, COP = copular, DAT = dative, DEF = definiteness marker, DEM = demonstrative pronoun, DET = determiner, FOC = focus marker, FUT = future, GEN = genitive, HAB = habitual, INAN = inanimate, NF = non-finite, NOM = nominative, OBJ = object, OBL = oblique, OV = object voice, PL = plural, POSS = possessive pronoun, PRF = perfect, PRT = particle, PST = past, $Q_{Y/N}$ = yes/no question marker, REL = relative clause marker, RP = resumptive pronoun, SG = singular, SM = subject marker, SUBJ = subject, TOP = topic marker, V (of rV) = vowel, WH = wh-word.

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Competing interests

References

Adesola, Oluseye. 2010. The non-agreeing subject resumptive pronoun in Yoruba. In Enoch, O. Aboh & James, Essegbey (eds.), *Topics in Kwa Syntax*, vol. 78, 65–89. Dordrecht: Springer. DOI: https://doi.org/10.1007/978-90-481-3189-1_4

Arregi, Karlos & Nevins, Andrew. 2012. *Morphotactics: Basque Auxiliaries and the Structure of Spellout*, vol. 86. Springer Science & Business Media.

Baier, Nico. 2018. *Anti-agreement*. Berkeley, CA: University of California dissertation.

Bjorkman, Bronwyn & Zeijlstra, Hedde. 2019. Checking up on (ϕ-) Agree. *Linguistic Inquiry* 50(3). 527–569. DOI: https://doi.org/10.1162/ling_a_00319

Bobaljik, Jonathan David. 2012. *Universals in comparative morphology: Suppletion, superlatives, and the structure of words*. MIT Press. DOI: https://doi.org/10.7551/mitpress/9069.001.0001

Božič, Jurij. 2020. Strictly local impoverishment: An intervention effect. *Linguistic Inquiry* 51(2). 395–409. DOI: https://doi.org/10.1162/ling_a_00339

Ershova, Ksenia. To appear. φ-feature mismatches in Samoan resumptives as postsyntactic impoverishment. In *Proceedings of CLS 53 (2023)*. https://kershova.github.io/Ershova_CLS59_proceedings.pdf.

Fongang, Tadjo Leonel. 2024. Nominal prefix drop in Aghem: Agree and strictly local Impoverishment. *Poster presented at NELS 55*. https://bpb-us-w2.wpmucdn.com/campuspress.yale.edu/dist/b/4571/files/2024/09/nels55_abstract_tadjo.pdf.

Fuchs, Zuzanna & van der Wal, Jenneke. 2022. The locus of parametric variation in Bantu gender and nominal derivation. *Linguistic Variation* 22(2). 268–324. DOI: https://doi.org/10.1075/lv.20007.fuc

Georgi, Doreen & Amaechi, Mary. 2023. Resumption in Igbo: two types of resumptives, complex phi-mismatches, and dynamic deletion domains. *Natural Language & Linguistic Theory* 41. 961–1028. DOI: https://doi.org/10.1007/s11049-022-09558-x

Halle, Morris. 1997. Distributed morphology: Impoverishment and Fission. *MIT Working Papers in Linguistics* 30. 425–449.

Hein, Johannes & Georgi, Doreen. 2021. Asymmetries in Asante Twi A'-movement: On the role of noun type in resumption. *Proceedings of NELS 51*. https://johannes-hein.de/documents/NELS51_proceedings_Hein+Georgi.pdf.

Kallulli, Dalina & Trommer, Jochen. 2011. Closest c-command, agree and impoverishment: The morphosyntax of non-active voice in Albanian. *Acta Linguistica Hungarica* 58(3). 277–296. DOI: https://doi.org/10.1556/ALing.58.2011.3.5

Keine, Stefan & Müller, Gereon. 2020. Impoverishment. https://ling.auf.net/lingbuzz/005025.

Keupdjio, Hermann. 2020. *The syntax of A'-dependencies in Bamileke Medumba*. University of British Columbia dissertation. https://open.library.ubc.ca/soa/cIRcle/collections/ubctheses/24/items/1.0389713.

Korsah, Sampson & Murphy, Andrew. 2020. Tonal reflexes of movement in Asante Twi. *Natural Language & Linguistic Theory* 38(3). 827–885. DOI: https://doi.org/10.1007/s11049-019-09456-9

Kramer, Ruth. 2015. *The morphosyntax of gender*, vol. 58. Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199679935.001.0001

Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40(2). 187–237. DOI: https://doi.org/10.1162/ling.2009.40.2.187

Landau, Idan. 2006. Chain resolution in Hebrew V(P)-fronting. *Syntax* 9(1). 32–66. DOI: https://doi.org/10.1111/j.1467-9612.2006.00084.x

McCloskey, James. 2006. Resumption. In Martin, Everaert & Henk, van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 94–117. Oxford: Blackwell. DOI: https://doi.org/10.1002/9780470996591.ch55

Müller, Gereon. 2004. A distributed morphology approach to syncretism in russian noun inflection. In *Proceedings of FASL*, vol. 12. 353–373. https://home.uni-leipzig.de/muellerg/mu52.pdf.

Nevins, Andrew. 2011. Marked targets versus marked triggers and Impoverishment of the dual. *Linguistic Inquiry* 42(3). 413–444. DOI: https://doi.org/10.1162/LING_a_00052

Scott, Tessa. 2021. Two types of resumptive pronouns in Swahili. *Linguistic Inquiry* 52(4). 812–833. DOI: https://doi.org/10.1162/ling_a_00397

Stegovec, Adrian. 2020. Taking case out of the Person-Case Constraint. *Natural Language & Linguistic Theory* 38. 261–311. DOI: https://doi.org/10.1007/s11049-019-09443-0

van Urk, Coppe. 2018. Pronoun copying in Dinka Bor and the copy theory of movement. *Natural Language & Linguistic Theory* 36(3). 937–990. DOI: https://doi.org/10.1007/s11049-017-9384-x

Wurmbrand, Suzanne. 2017. Feature sharing or how I value my son. In Halpert, Claire & Kotec, Hadas & van Urk, Coppe (eds.), *The Pesky Set: Papers for David Pesetsky*, 173–182. MIT Working Papers in Linguistics.

Yip, Ka-Fai & Ahenkorah, Comfort. 2023. Non-agreeing resumptive pronouns and partial copy deletion. *University of Pennsylvania Working Papers in Linguistics 29.* https://repository.upenn.edu/handle/20.500.14332/58734.