

Syntactic deletion within resumptive pronouns in Swahili

Tessa Scott
 UC Berkeley
 tessa_scott@berkeley.edu

1 Introduction

- It has been observed in Swahili (Keach 1980,1986; Ngonyani 2006b) that when an object of a preposition like ‘na’ is relativized, the relative clause terminates in a resumptive pronoun, shown in (1).

(1) Sam ndi-ye amba-ye ni-li-zungumza na-ye.
 Sam COP-1 amba-1 1ST.SG.S-PST-talk to-1
 ‘It’s Sam that I talked to (him).’¹²

- The following is a new observation: When a first and second person pronoun heads a relative clause, the prepositional object resumptive pronoun can *optionally* express person features:

(2) Mimi ndi-ye amba-ye Sam a-li-zungumza na-mi/ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-talk to-1ST.SG/1
 ‘It’s me who Sam talked to.’

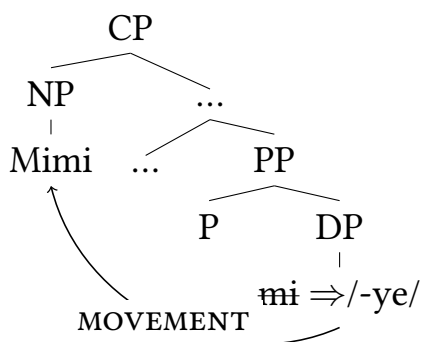
- I argue that these pronouns, while freely varying in simple relative clauses, correspond to different underlying structures.
 - It is well known that resumptive pronouns can either represent bound pronouns or movement copies (McCloskey 2006, Aoun et al 2001, Sichel 2014).
 - In Swahili, *mi* is a bound pronoun while *ye* is a movement copy.
- I analyze *ye* as lacking person features. Under this view, it is predicted that the bound pronoun resumptive pronoun expresses more features than the movement copy.
 - The Copy Theory of Movement (Chomsky 1993)
 - Chain-reduction Algorithm (Landau 2006, van Urk 2017)

¹All data not cited, I elicited with a Kenyan speaker of Swahili in Berkeley, CA.

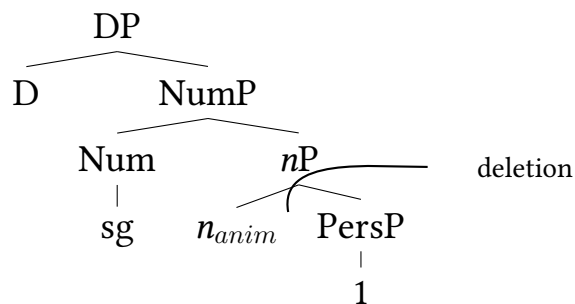
²Abbreviations used include: 1ST=first person, 2ND=second person, 1,2,3, etc=noun classes, COP=copula, DEM=demonstrative, HAB=habitual, SG=singular, PL=plural, PST=past, PRS=present, POSS=possessive.

- (3) Mimi ndi-ye amba-ye Sam a-li-zungumza na-ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-talk to-1
 ‘It’s me who Sam talked to.’

(4) Movement RP



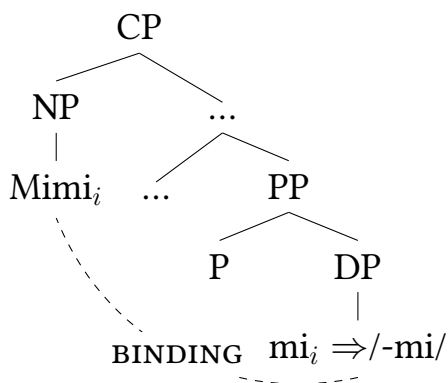
(5) Deletion



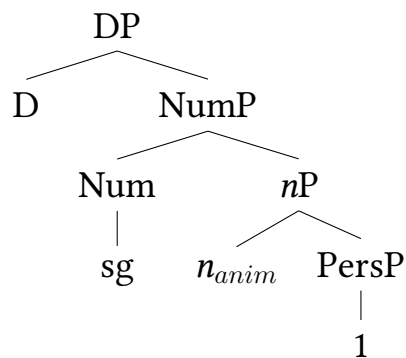
(6) [sg nanim] ↔ /-ye/

- (7) Mimi ndi-ye amba-ye Sam a-li-zungumza na-mi.
 1ST.SG COP-1 amba-1 Sam 1-PST-talk to-1ST.SG
 ‘It’s me who Sam talked to.’

(8) Bound RP



(9) No Deletion



(10) [1 sg nanim] ↔ /-mi/

- **Roadmap**

- §2 Resumption

- §3 Swahili Relative Clauses

- §4 Swahili Resumption

- §5 Two types of resumptive pronouns in Swahili

- §6 Syntactic deletion

- §7 Conclusion

2 Resumption

- An informal definition

- **Resumptive pronoun**

- A resumptive pronoun is a pronoun in a long distance dependency construction (i.e. *wh*-question, relative clause, etc.) which is not the head of the dependency.

- It has been shown that resumptive pronouns can be syntactically bound pronouns (Shlonsky 1992; McCloskey 1990, 2002, 2006)
- It has also been shown that resumptive pronouns can be overt movement traces (Koopman, 1984; Engdahl, 1985; Aoun et. al, 2001; Sichel, 2014).
- Sichel (2014) shows that the two types of resumptive pronoun can co-occur in a single language.
- Conclusion: resumptive pronouns do not indicate one specific structure
- **The data from Swahili add to our understanding of resumption by showing that both types of resumptive pronouns can co-exist in a single language and be morphologically *distinct* in predictable ways.**

3 Swahili Relative Clauses

- There are three ways to form relative clauses in Swahili but this work is only concerned with the type with the overt complementizer *amba*.

3.1 Two ways to derive relative clauses

- Barrett-Keach (1980), Keach (2004): **Base-generation and binding of a null *pro* (non-movement)**

- Evidence: lack of relative clause island effects

(11) Mtu amba-ye ni-li-wa-ona watoto amba-o a-na-wa-penda...
 1.person amba-1 1P.SG.S-PST-2-see 2.child amba-2 1-PRS-2-like
 Person who I saw the children who (he) likes (them)...'
 Keach (1980:71)(Gloss added)

- Ngonyani (2001, 2006a): **Head raising (movement)**

- Evidence: reconstruction effects

Idiom reconstruction

(12) Maji amba-yo komba a-li-pig-a ya-li-kuwa ma-kali
 6-water amba-6.REL 1.komba 1-PST-hit-FV 6-PST- INF-be-FV 6-strong
 'The beer that the bushbaby drank was very strong.' Ngonyani (2001:68)

- Pronoun binding

(13) Kitabu ch-ake cha kwanza amba-cho kila mwandishi
 7.book 7-3S.POSS 7-CON first amba-7.REL every 1.writer
 hu-ji-vuni-a hu-w-a ki-zuri sana.
 HAB-RFL-be.proud-APP-FV HAB-be-FV 7-good very
 'His first book for which the writer is very proud is very good.' Ngonyani
 (2001:65)

- Today I will present data in favor of the view that relative clauses in Swahili can be derived either through movement or through base-generation and binding.
- This conclusion makes sense of the data in (11), (12), and (13) because with both strategies available, we expect to see reconstruction and pronoun binding as well as a lack of island effects.

4 Swahili Resumption

- Swahili does not show overt pronominal resumption for subjects and objects.

- Subject resumption ungrammatical

(14) Mwanafunzi amba-ye (*yeye/*ye) a-na-soma a-li-ondoka.
 1.student amba-1 (*1) 1-PRES-read 1-PST-leave
 'The student who is reading left.'

- Object resumption ungrammatical

- (15) Daktari amba-ye Kamugisha a-li-mw-ona (*yeye/*ye) a-li-ondoka.
 Doctor amba-1 Kamugisha 1-PST-1-see (*1) 1-PST-leave
 ‘The doctor who Kamugisha saw left.’

- However, relativization of objects of preposition always results in a resumptive pronoun.

- (16) M-tu amba-ye ni-li-zungumza na-*(ye)
 1.person amba-1 1ST.SG-PST-talk to-*(1)
 ‘The person that I talked to’

4.1 Phonological Motivation for Resumption

- Resumption is due to a strict phonological Minimality requirement in Swahili
 - Disyllabic Minimality (Park, 1995); Bimoraic Minimality (Scott, 2015)
 - Both accounts analyze a two-unit minimal word, which would be violated in monosyllabic preposition stranding.
- Other monosyllabic prepositions like *kwa* and *a*, shows resumption as well in the genitive case. Most prepositional meaning is expressed with heavy nouns like *kando* and an agreeing *-a*.

- (17) Ni-na-fahamu m-tu amba-ye u-na-simama kando y-a-ke
 1ST.SG-PRES-know 1-person amba-1 2ND.S-PRES-stand 9.side 9-of-1.GEN
 ‘I know the person who you are standing next to.’

- (18) Kata nyama kwa-cho.
 cut meat with-7
 ‘Cut the meat with it.’

Keach (1986: 560)

- Multi-syllabic prepositions are ungrammatical with resumptives. The applicative suffix is used instead.

4.2 Form of pronouns

- Resumptive pronouns in Swahili look morphologically identical to regular pronouns, supporting McCloskey’s (2002) claim that resumptive pronouns are just ordinary pronouns.

- (19) Ni-li-zungumza na-ye.
 1ST.SG.S-PST-talk to-1
 ‘I talked to him.’

- (20) Mtu amba-ye ni-li-zungumza na-ye...
 1.person amba-1 1ST.SG.S-PST-talk to-1...
 ‘The person that I talked to...’

- I adopt Carstens’ (1991) view of noun class in Bantu: it is the expression of number specified for gender.³

Table 1: Bantu Gender

	Singular	Plural
Animate	Noun Class 1	Noun Class 2
Gender B	Noun Class 3	Noun Class 4
Gender C	Noun Class 5	Noun Class 6
Gender D	Noun Class 7	Noun Class 8
Gender E	Noun Class 9	Noun Class 10

- The 3rd person pronouns are also the pronouns for gender A singular and plural.
 - A Distributed Morphology approach (DM; Halle and Marantz 1993): I propose that *ye* is underspecified for person, spelling out only ANIMATE and SG.

(21) Vocabulary Insertion Rules:

$[\varphi(\text{PERS: 1, GEN: ANIM, NUM: SG})]$	\leftrightarrow	/mi/
$[\varphi(\text{PERS: 1, GEN: ANIM, NUM: PL})]$	\leftrightarrow	/si/
$[\varphi(\text{GEN: ANIM, NUM: SG})]$	\leftrightarrow	/ye/
$[\varphi(\text{GEN: ANIM, NUM: PL})]$	\leftrightarrow	/o/

4.3 Features of resumptive pronouns

- The two types of resumptive pronouns differ in their expression of person features.
- Most of this data come from first and second person pronominal clefts, which I take to use relativization of the clefted element.
- First and second person pronominal clefts can terminate in resumptive pronouns that match in person features or the resumptive pronoun can optionally surface as the person-less singular pronoun *-ye*.

First Person

- (22) Mimi ndi-ye amba-ye Sam a-li-zungumza na-mi/ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-talk to-1ST.SG/1
 ‘It’s me who Sam talked to.’

³This table shows noun classes 1-10 only. There are up to 18 noun class in any Bantu language, with Swahili having 1-10 and 14-18 (not shown).

Second Person

- (23) Wewe ndi-ye amba-ye Sam a-li-zungumza na-we/ye.
 2ND.SG COP-1 amba-1 Sam 1-PST-talk to-2ND.SG/1
 ‘It’s you who Sam talked to.’

- However, resumptive pronouns obligatorily match in number and gender.
 - Resumptive pronouns must match in number

Singular Clefts

- (24) a. Mimi ndi-ye amba-ye Sam a-li-zungumza na-mi/ye/*si/*o.
 1ST.SG COP-1 amba-1 Sam 1-PST-talk to-1ST.SG/1/*1.PL/*2
 ‘It’s me who Sam talked to.’
- b. Wewe ndi-ye amba-ye Sam a-li-zungumza na-we/ye/*nyi/*o.
 2ND.SG COP-1 amba-1 Sam 1-PST-talk to-2ND.SG/1/*2.PL/*2
 ‘It’s you who Sam talked to.’

Plural Cleft

- (25) a. Sisi ndi-o amba-o Sam a-li-zungumza na-si/o/*mi/*ye.
 1ST.PL COP-2 amba-2 Sam 1-PST-talk to-1ST.PL/2/*1ST.SG/*1
 ‘It’s us who Sam talked to.’
- b. Nyinyi ndi-o amba-o Sam a-li-zungumza na-nyi/o/*we/*ye.
 2ND.PL COP-2 amba-2 Sam 1-PST-talk to-2ND.PL/2/*2ND.SG/*1
 ‘It’s you all who Sam talked to.’

- Resumptive pronouns must match in gender

- (26) Hivi ni vi-tu amba-vyo ni-li-cheza na-vyo/*o/*zo.
 DEM-8 be 8-thing amba-8 1ST.SG-PST-PLAY with-8/*2/*10
 ‘These are the thing that I played with.’

- Person mismatches alongside number matches is a typologically common pattern (see Dinka Bor, van Urk 2017; Nupe, Kandybowicz 2007, Finnish et al 2008; a.o.)
- The special-ness of person has been observed before (Baker 2008, Preminger 2011) and Baier (2016) proposes a feature neutralization hierarchy which explains why if a language shows Anti-Agreement effects for ϕ -features, it will show them for person first.
- Summary of resumptive pronoun features in Swahili:
 - Resumptive pronouns are only found as objects of mono-syllabic prepositions.

- Resumptive pronouns look identical to ordinary pronouns.
- /ye/ and /o/ are unspecified for [PERSON].
- Resumptive pronouns obligatorily match in number and gender, but may optionally surface without person features.

5 Two types of resumptive pronouns in Swahili

- Since Chomsky (1977) it has been assumed that if wh- questions and relative clauses can be formed from a construction, it is formed by movement and that if not, it is formed through base generation and binding.
- My hypothesis: the two forms of resumptive pronouns in Swahili can be pulled apart my movement tests. The data supports this claim.

5.1 Bound resumptive pronoun

- We can isolate bound pronoun constructions in Swahili clefts with adjunct islands, known to block movement. Resumptive pronouns obligatorily match in person features inside adjunct islands.

‘Because’ island: *kwa sababu..*

- (27) Mimi ndi-ye amba-ye Sam a-li-lia kwa sababu a-li-zungumza na-mi/*-ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-cry for reason 1-PST-talk to-1ST.SG/*-1
 ‘It’s me who Sam cried because he talked to.’

‘When’ island: *-po-*

- (28) Mimi ndi-ye amba-ye Sam a-li-lia a-li-po-zungumza na-mi/*-ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-cry 1-PST-when-talk to-1ST.SG-1
 ‘It’s me who Sam cried when he talked to’

‘While’ island: *wakati wa...*

- (29) Mimi ndi-ye amba-ye Sam a-li-lia wakati wa a-li-zungumza na-mi/*-ye.
 1ST.SG COP-1 amba-1 Sam 1-PST-cry while of 1-PST-talk to-1ST.SG-1
 ‘It’s me who Sam cried while he talked to’

- **Conclusion: Bound pronoun RPs must match the head of the relative clause in person features.**

5.2 Movement resumptive pronouns

- We can isolate movement constructions in Swahili using parasitic gaps.
- In a parasitic gap construction, the ‘parasitic gap’ is only licensed for movement if the other gap is a ‘true gap’ (movement site) (Engdahl 1985).
- Parasitic gaps in English:

(30) Which articles did John file _____ without reading ______p?

- Resumptive pronouns in parasitic gap constructions obligatorily surface without person features.⁴

(31) Mimi ndi-ye amba-ye u-li-kula na-ye_t kabla ya ku-cheza na-ye_p
 1ST.SG COP-1 amba-1 2ND.S-PST-eat with-1 before of INF-dance with-1
 ‘It’s me who you ate with ___t before dancing with ___p’

(32) *Mimi ndi-ye amba-ye u-li-kula na-mi_t kabla ya ku-cheza na-ye_p
 1ST.SG COP-1 amba-1- 2ND.S-PST-eat with-1ST.SG before of INF-eat with-1
 Intended: ‘It’s me who you ate with ___t before dancing with ___p’

Conclusion: There are two types of resumptive pronouns in Swahili. In first and second person clefts:

- Resumptive pronouns with person features are bound pronouns.
- Resumptive pronouns without person features are movement copies.

6 Syntactic Deletion

6.1 Overview

- The difference between the realization of the resumptive pronouns *ye* and *mi* is in the size of the structure they realize.

– /ye/ \longleftrightarrow [# [n]]

– /mi/ \longleftrightarrow [# [n [π]]]

⁴The sentence is grammatical if both pronouns are *mi*. This is expected if *mi* represents a bound pronoun: there are no movement sites.

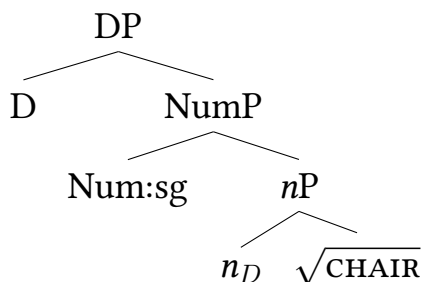
- The extra structure in /mi/, π , is *deleted* in movement copies, resulting in /ye/
- The deletion occurs because movement copies are subject to a chain deletion algorithm at PF and bound pronouns are not.
 - The chain-deletion algorithm is constrained by MaxElide (Merchant 2001, 2008; Takahashi 2006).

6.2 Gender on *n*

- Kramer (2015) argues that gender is on *n* for languages like Amharic with grammatical gender.
- Fuchs & van der Wal (2018) argue that gender is on *n* for Bantu specifically.
 - Num + *n* \longleftrightarrow Noun Class
 - Their evidence comes from diminutive, augmentatives, locatives, nominalization, and multiple exponence of number and gender on a single noun.

6.3 Structure

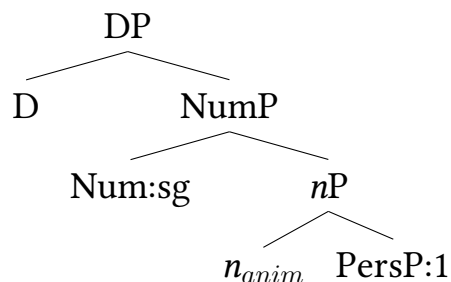
(33) Lexical DP structure



(34) ki-ti
7-chair
'chair'

(35) [sg + n_D] \longleftrightarrow ki- / $\sqrt{\text{CHAIR}}$
 $\sqrt{\text{CHAIR}}$ \longleftrightarrow ti

(36) Pronoun Structure



(37) mimi
1ST.SG
'me'

(38) [sg + n_{anim} + 1] \longleftrightarrow mimi

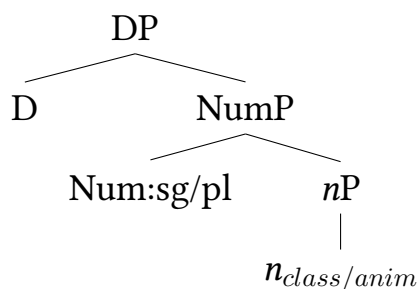
- Flavors of *n* in Bantu: Class, Diminutive, Augmentative, Locative (Fuchs & van der Wal, 2018)
- I propose a fifth flavor of *n* is available in Bantu languages: animacy (n_{anim})⁵

⁵ n_{anim} is similar to Pesetsky's (2016) analysis of an interpretable animacy feature on a *n* above the typical *n*.

6.4 Pronouns

- *n* is spelled out as a person-less pronoun when it doesn't have a context

(39) Pronoun



(40) ...na-ye.
...with-1
'...with him/her'

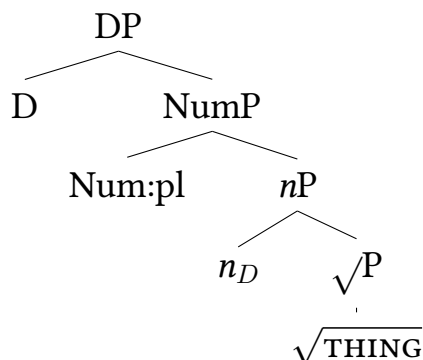
(41) ...na-vyo
...with-8
'...with them.'

$[sg + n_{anim}] \leftrightarrow /-ye/$ $[pl + n_D] \leftrightarrow /-vyo/$

6.5 Derivations of movement resumptive pronouns in the morphology

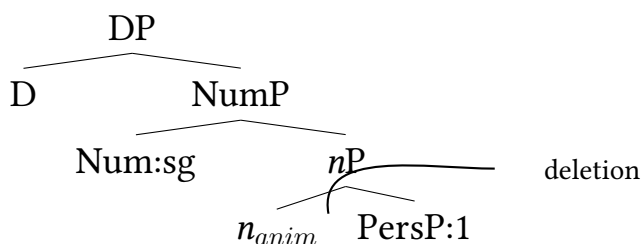
6.5.1 Lexical DPs

- Life begins for a lexical DP in the syntax



- After undergoing \bar{A} movement from the object of a monosyllabic preposition, it is marked for deletion by the chain reduction algorithm.
- The algorithm applies MaxElide to decide how much of the phrase can be deleted.
- Since objects of monosyllabic prepositions have a phonological requirement, only partial deletion is allowed.
- Since Num and n_D together spell out a pronoun, \sqrt{P} is deleted.

(44) Pronoun Structure



- What is left to spell out is [sg + n_{anim}]

sg + n_{anim} \longleftrightarrow /-ye/

- This is the pronoun found in the following sentence:

(45) Mimi ndi-ye amba-ye u-li-kula na-ye_t kabla ya ku-cheza na-ye_p
 1ST.SG COP-1 amba-1 2ND.S-PST-eat with-1 before of INF-dance with-1
 ‘It’s me who you ate with ___t before dancing with ___p’

- The derivation of the non-movement resumptive pronoun will not undergo any of the steps in 6.5.2. Instead it will simply be spelled out as [sg + n_{anim} + 1] \longleftrightarrow mi

7 Conclusion

7.1 Summary

- Swahili has two types of obligatory resumptive pronouns and they are morphologically distinct.
- One type of resumptive pronoun is a movement copy which is pronounced without person features while the other type is a bound pronoun, pronounced with person features.
- Movement copies in clefts and relative clauses are subject to a chain-deletion algorithm (Landau 2006, van Urk 2017) and bound pronouns are not.
- Gender on n motivates MaxElide to capture gender-matching pattern
 - Gender is on n (Kramer 2015, Fuchs & van der Wal 2018) and one flavor of n in Swahili, n_{anim} is present in animate nouns and pronouns
 - Full personal pronouns are spelled out by Num + n_{anim} + PersP.
 - /ye/ is spelled out by Num + n_{anim} only

- Since Swahili employs both movement and base-generation and binding for \bar{A} dependencies, person marking on RPs is mostly optional. It is only in islands and parasitic gap constructions that the difference is seen.

7.2 Remaining questions

- How can we capture the fact the the suffix on the relative complementizer in all constructions shows the same suffix we see on prepositions except that it never inflects for person (*amba-mi)?
- Why does Swahili allow both movement and base generation?
 - One possible answer: In Swahili, there is covert ambiguity between different types of relative complementizers, a distinction made overt in Irish.

8 References

- Aoun, J., Choueiri, L. Hornstein, N. (2001). Resumption, movement, and derivational economy. *Linguistic Inquiry* 32. 371–403.
- Baier, N. (in prep). Anti-Agreement. Doctoral Dissertation UC Berkeley.
- Baier, N. (2017). Unifying Anti-Agreement and Wh-Agreement. Handout from GLOW 40.
- Baier, N. (2016) A Survey of Anti-Agreement Effects. PhD Prospectus. UC Berkeley.
- Baker, M. (2008). *The Syntax of Agreement and Concord*. Cambridge University Press, Cambridge, Mass.
- Carstens, V. (2011). Hyperactivity and hyperagreement in Bantu. *Lingua*, 121(5), 721-741.
- Carstens, V. (1991). The syntax and morphology of determiner phrases in Kiswahili. Unpublished Ph. D. dissertation, University of California at Los Angeles.
- Chomsky, N. (1993). “A Minimalist Program for Linguistic Theory”. In K. Hale and S. Keyser (eds.): *The View from Building 20: Essays in Honor of Sylvain Bromberger*, 1-52. MIT Press, Cambridge, MA.
- Chomsky, N. (1977). On wh-movement. *Formal syntax*, 71-132.
- Engdahl, E. (1985). Parasitic gaps, resumptive pronouns, and subject extractions. *Linguistics* 23:3-44.
- Fuchs, Z., van der Wal, J. (2018) Bantu DP Structure: A *n* analysis of gender. Poster presented at the 92nd Annual Meeting of the Linguistic Society of America. Salt Lake City, UT.
- Harbour, Daniel. 2016. *Impossible persons*. Cambridge, MA: MIT Press.
- Halle, M., Marantz, A. (1993). Distributed morphology and the pieces of inflection. In *The view from building 20*, eds. Ken Hale and Samuel J. Keyser, 111–176. Cambridge: MIT Press
- Halle, M., Marantz, A. (1994). Some key features of distributed morphology. In *Papers in phonology and morphology (MITWPL 21)*, eds. Andrew Carnie et al., Cambridge, MA, 275–288.
- Henderson, B. (2013). Agreement and person in anti-agreement. *Natural Language Linguistic Theory*, 31(2), 453-481.
- Holmberg, A. & Nikanne, U. (2008). Subject doubling in Finnish: The role of deficient pronouns. In *Microvariation in syntactic doubling*, ed. by Sjef Barbiers, Olaf Koenenman, Marika Lekakou, and Margreet van der Ham, 325–349. Amsterdam: Brill.
- Koopman, Hilda. (1984). *The syntax of verbs: From verb movement in the Kru languages to Universal Grammar*. Dordrecht, The Netherlands: Foris.
- Kandybowicz, J. (2007a). On fusion and multiple copy spell-out. The case of verbal repetition. *The copy theory of movement*, 119-150.
- Kandybowicz, J. (2007b). *The grammar of repetition: Nupe grammar at the syntax-phonology interface*. Amsterdam: John Benjamins.

- Kramer, R. (2015). The morphosyntax of gender and number: converging and crossing. Hand-out. University of Chicago Colloquium.
- Landau, I. (2006). Chain Resolution In Hebrew V(P) fronting. *Syntax*, 9(1), 32-66.
- Landau, I. (2007). EPP extensions. *Linguistic Inquiry* 38:485–523.
- McCloskey, J. (2006). Resumption. In *The Blackwell Companion to Syntax*, ed. by Martin Everaert and Henk van Riemsdijk, 94-117. Oxford: Blackwell.
- McCloskey, J. (2002). Resumption, Successive Cyclicity, and the Locality of Operations. In: *Derivation and Explanation*. Samuel Epstein and Daniel Seeley (eds.), 184–226. Oxford: Blackwell.
- McCloskey, J. (1990). Resumptive Pronouns, A-Bar Binding and Levels of Representation in Irish. In: *Syntax of the Modern Celtic Languages*. Randall Hendrick (ed.), 199–248. San Diego: Academic Press.
- Merchant, J. (2001) *The Syntax of Silence: Sluicing, Islands and the Theory of Ellipsis*, Oxford University Press, Oxford.
- Merchant, J. (2008). Variable island repair under ellipsis. *Topics in ellipsis*, 1174, 132-153.
- Ngonyani, D. (2006a). Attract F and verbal morphology in Kiswahili. *The Linguistic Review*, 23(1), 37-68.
- Ngonyani, D. (2006b). Resumptive pronominal clitics in Bantu languages. In *Selected Proceedings of the 36th Annual Conference on African Linguistics: Shifting the Center of Africanism in Language Politics and Economic Globalization*. Somerville, MA: Cascadilla Proceedings Project (pp. 51-59).
- Ngonyani, D. (2001). Evidence for head raising in Kiswahili Relative Clauses. *Studies in African Linguistics* 30, 1:59-73.
- Park, J. I. (1995). Minimality effects in Swahili. *Theoretical approaches to African linguistics*, 1, 295.
- Preminger, O. (2011). *Agreement as a fallible operation* (Doctoral dissertation, Massachusetts Institute of Technology).
- Scott, T. (2015). *The effect of syllable structure and Minimality on Arabic and English loan-words in Swahili*. Ms. University of Kansas.
- Sichel, I. (2014). Resumptive pronouns and competition. *Linguistic Inquiry* 45:655-693.
- Smith, P., Beata Moskal, Ting Xu, Jungmin Kang, and Jonathan Bobaljik. 2016. Case and number suppletion in pronouns. Manuscript, LingBuzz, lingbuzz/003110.
- Takahashi, S. (2006). *Decompositionality and Identity*, Doctoral dissertation, MIT.
- van Urk, C. (2017). *Pronoun Copying in Dinka Bor and the Copy Theory of Movement*. Ms. Queen Mary University of London.