

DP Positions in African Languages

Vicki Carstens, University of Missouri
 Michael Diercks, Pomona College
 Loyiso Mletshe, University of the Western Cape
 Juvénal Ndayiragije, University of Toronto
 Justine Sikuku, Moi University

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I. Empirical focus. A central concern of syntactic theory has long been to explain and predict the distribution of nominal expressions, henceforth D(eterminer) P(hrases), and their involvement in morpho-syntactic relations. Where can they occur? When can they move, control agreement, and bear Case? The study of Indo-European (IE) languages has yielded strong generalizations upon which the theory is based:

- (1) *A DP cannot appear as subject of a bare infinitive:*
 - a. *[John to leave] would surprise Mary.
 - b. *It is possible [John to leave].
 - c. *It seems [John to have left].

- (2) *A DP can raise out of an infinitive, but not out of a tensed clause:*
 - a. John is known [<John> to like ice cream].
 - b. *John is known [(that) __ likes ice cream].

- (3) *DP objects of passive verbs generally cannot appear in situ:*
 - a. *It was believed [the story].
 - b. [The story] was believed.

- (4) *A DP can control just one instance of full-featured agreement:*
 - a. John has been eating candy.
 - b. *John has beens eatings candy. (see also (2) above)

As (1'-4') illustrate, a number of African languages in which such phenomena have been explored seem to turn these generalizations more or less on their heads.

- (1') *A DP can appear as subject of a bare infinitive:*
 I-na-wezakana (*kwa) Maiko ku-m-pig-i-a Tegani simu.
 9SA-PRS-possible for Michael INF-1OA-beat-APPL-FV Tegan phone
 'It is possible (for) Michael to call Tegan.' [Swahili; Diercks to appear]

- (2') *A DP can raise out of either a tensed clause or an infinitive:*
 - a. Chipo a-no-fungidzir-w-a kuti a-noda doro.
 3rdS-HAB-believe-PASS-FV that 3rdS-like beer
 LIT: 'Chipo is believed that s/he likes beer'

 - b. Chipo a-no-fungidzir-w-a ku-noda doro.
 3rdS-HAB-believe-PASS-FV INF-like beer
 'Chipo is believed to like beer.' [Shona; Tendai Mutangadura p.c.]

- (3') *DP objects of passive verbs freely appear in situ:*
 kw-á-uray-iw-a murúmé né-shumba ku-rukova.
 17SA-PAST-kill-PASS-FV 1man by-9lion 17-11river
 Lit: 'There was killed a man by a lion at the river.' [Shona; Harford-Perez 1985]

“For the Case-agreement systems, the uninterpretable features are phi-features of the probe and structural Case of the goal N. Phi-features of N are interpretable; hence, N is active only when it has structural Case. Once the Case value is determined, N no longer enters into agreement relations and is ‘frozen in place’.” (Chomsky DBP: 6)

- (13) a. *It seems he to have left
 b. It seems that he has left
 c. He seems to have left
 d. *He seems __ has left
- (13') a. *It seems [[3rdSuCase] to have left]
 b. It seems [that [3rdSuCase] Tu ϕ have left] → It seems [that [heNOM] T3S has left]
 c. [[HeNOM] T3rdS seems [<3rdSuCase> to have left]]
 d. *[[He NOM,NOM] T3rdS seems [<HeNOM> T3rdS has left]]

If Bantu DPs were frozen in place after a single Agree relation, then (2'a) and (4') would not be possible. If Agree relations with T or v* were required to value the Case of Bantu DPs, then (1'), (3') (5b) and (6) would not be possible, since their subjects appear to have no source of Case-valuation.

•**Deduction: Case and Activity work differently in Bantu languages than is predicted by standard assumptions.**

III. Our hypotheses in approaching (1'-6).

A. Hyperactivity and Hyperagreement (Carstens 2010 and to appear): theoretical connection between the existence of Bantu's “exotic” A-movements and iterating agreement: both indicate liberalized Activity in Agree relations beyond what IE allows.

•Why should Activity be broader in Bantu?

•An observation: Bantu agreement always includes the features of noun class (= gender of N +number, realized fusionally; see Carstens 1991).

•Case Independence of Gender Agreement (CIGA): Agreement that includes gender features is always independent of Case-valuation (Carstens to appear).

- (14) a. la petite fille [French]
 D_{fem} small_{fem} girl(Fem)
 | |
 | |
 'the little girl'
 Agree #1
 Agree #2
- b. la petite fille est tombee <la petite fille>
 D_{fem} small_{fem} girl(Fem) be.3rdS fall_{fem}
 'the little girl fell' | | Agree #3

Proposal: Grammatical gender is meaningless, hence uninterpretable, like abstract Case. It therefore serves as an “Activity” feature like abstract Case does.

Why we should view gender as uninterpretable: each gender lacks consistent semantic content:

- (15) a. pomodoro 'tomato' masculine b. patata 'potato' feminine [Italian]

- c. maleta 'suitcase' feminine
 d. libro 'book' masculine [Spanish]
- (16) a. chizvarwa/zvizvarwa 7citizen/8citizen 'citizen/s'
 b. chikwenga/zvikwenga 7sisal/8sisal 'sisal plant/s' [Shona]
- c. chisarara/zvisarara 7lawn/8lawn 'lawn/s'
 d. chingwa/zvingwa 7loaf/8loaf 'loaf/loaves of bread'

Accounting for pockets of semantic unity via redundancy/mapping rules:

- (17) a. la niña the.fem child.fem 'the girl'
 b. el niño the.masc boy.masc. 'the boy' [Spanish]

(18) The proposal of Harris (1991):

- a. Store some stems underspecified for gender
- b. Human Cloning: [Stem_i, N, human] → [Stem_i, N, human, female]
 → [Stem_i, N, human, male]
- c. Human Gender: 'female' → f/[__ human]
- d. Attach relevant morphology

(19) Sample Bantu gender mapping rules (Swahili versions):

- [human] → classes 1/2
 [language name] → classes 7/8
 [borrowed word for non-human beginning with [ki]] → classes 7/8, e.g. *kitabu/vitabu*

Why is possible for agreement to iterate when it includes grammatical gender, and for a DP to raise out of a tensed clause? Restated in Minimalist terms, why is a goal deactivated by one instance of Agree if its "activity" feature is Case, but not if its activity feature is grammatical gender?

Recall that both IE concord and Bantu SA are iterable (see 14, 4', 6, and 20).¹

- (20) a. nzogu zí-kili z-á-twag-a maswá [Kilega]
 10elephant 10SA-be.still 10SA-ASP-stampede-FV 6farm
 'The elephants are still stampeding over the farms.'
- b. Khu-b-ere khu-irukha [Lusaamia]
 1PL-be-PST 1PL-run
 'We were running.'
- (21) Phonological theory of deactivation effects (Carstens 2010): Agree only deactivates uFs that it values, because PF can read only a single value for a given formal feature. And feature values cannot be licitly erased or over-written (on this last point, cf. Epstein, Kitahara & Seely 2010: Law of the Conservation of Features).

¹ In examples, Kilega data is from Kinyalolo (1991:156); Swahili from Carstens (2001:5); Lusaamia from Dennis Odalloh, consultant to a 2008 Field Methods class at University of Missouri. We thank him for his assistance.

III.B. The irrelevance of Case

The proposals above predict that DPs at the clause-level should not be restricted in the same way by (in)Activity in the same way as languages which have only Case features as Activity features. But they raise significant questions as to the role of Case. Diercks (to appear) points out a collection of Case-related puzzles in Bantu languages, summarized in (27):

(27) Case-related puzzles in Bantu (Diercks to appear)

- (i) No Case morphology
- (ii) No evidence of Agree relation with postverbal subjects in inversion constructions
- (iii) No impact of Case on activity
- (iv) Potential problems of multiple valuations in hyper-raising
- (v) Overt subjects of infinitives licit with no apparent Case-licensing mechanisms

Property (ii): No agreement with subjects in inversion

Subject-Object Inversion constructions (Ndayiragije 1999):

- (28) a. Ibitabo bi-á-ra-somye Johani. [Kirundi]
 8book 8SA-PST-read.PERF John OVS
 ‘John (not Peter) has read (the) books.’
- b. *pro* bi-á-ra-somye Johani *pro*VS
 8book 8SA-PST-read:PERF John
 ‘John (not Peter) has read them.’
- c. Petero a-á-anse kó [TP ibitabo bi-ø-soma abáána]
 Petero 3S-PST-refuse:PERF C 8book 8SA-PRES-read:IMPERF 2child
 [Lit: Peter refused that children (not adults) read books]
- (29) a. Mutu t-á-ku-sol-ág-á maku wéneéne.
 1person NEG-1SA-PROG-drink-HAB-FV 6beer alone [SVO]
 ‘A person does not usually drink beer alone.’ [Kilega; Kinyalolo 1991]
- b. Maku ta-má-ku-sol-ág-á mutu wéneéné.
 6beer NEG-6SA-PROG-drink-HAB-FV 1person alone [OVS]
 ‘No one usually drinks beer alone.’
 [Lit: beer doesn’t usually drink a person alone]

Locative inversion constructions

- (30) a. Ku-mu-saala kw-akwa mu-mu-siiru. [Lubukusu]
 3-3-tree 3SA-fell 18-3-forest **Declarative**
 ‘A tree fell in the forest.’
- b. Mu-mu-siiru mw-akwa-mo ku-mu-saala. **Locative Inversion**
 18-3-forest 18SA-fell-18L 3-3-tree
 ‘In the forest fell a tree.’
- (31) Ku-Lúgushwá kú-kili ku-á-twag-a nzogu maswá. (repeated from (6))
 17- Lúgushwá 17SA-be.still 17SA-A-stampede-FV 10elephant 6farm
 ‘At Lugushwa elephants are still stampeding the farms’ [Kilega; Kinyalolo 1991]

Such inversion constructions are well-reported across many Bantu languages (Bresnan 1994; Bresnan and Kanerva 1989; Demuth 1990; Demuth and Mmusi 1997; Marten 2006; Buell 2007, among others).

Impersonal passives (Harford [Perez] 1985)

Some languages have passive constructions where a default locative subject agreement occurs, while the object remains *in situ*.

- (32) a. Kw-á-uray-iw-a mu-rúmé né-shumba ku-ru-kova. [Shona]
17S-PST-kill-PASS-FV 1-man by-9lion 17-11-river
'There was a man killed by a lion at the river.'
- b. Ha-ra-shoor-w-a u-bu-kawáavu mu-rí i-yi sokó. [Kiruúndi]
16S-PRS-sell-PASS-FV PP-14-rabbits 18-be this-9 9market
'There are sold rabbits in this market.'

On the standard assumptions described in section II, the postverbal subjects in all of these contexts could not have had their Case features valued, and therefore their unvalued features should trigger a crash (but do not in these languages).

Property (iii): No impact of Case on Activity

Property (iv): Questions of multiple Case-valuation

Hyper-raising Constructions (Carstens and Diercks to appear):

- (33) Efula yi-bonekhana i-na-kwa muchiri [Lusaamia]
9rain 9SA-appear 9SA-FUT-fall tomorrow
'It seems that it will rain tomorrow'
[Lit: rain seems will fall tomorrow]
- (34) Chisaang'i chi-lolekhana chi-kona [Lubukusu]
10animal 10SA-seem 10SA-sleep.PRES
'The animals seem to be sleeping.'
[OK to say if you're looking for animals and can't find any]
- (35) a. Ka-a-suubil-wa mbo omukeni k-ola [Lubukusu]
6SA-PST-believe-PASS that 1guest 1SA-PST.arrive
'It was believed that the guests arrived.'
- b. Omukeni ka-a-suubil-wa mbo k-ola
1guest 1SA-PST-believe-PASS that 1SA-PST.arrive
'The guest was believed to have arrived.'

Hyper-raising has also been reported in Igbo (Ura 1998) and Nguni (Zeller 2006), and therefore a larger-scale investigation of these constructions across African languages is in order to establish their properties cross-linguistically.

Property (v): Overt subjects of infinitives licensed

As noted in (1), DPs have traditionally been assumed to be impossible as overt subjects of infinitives (excluding ECM contexts).

- (36) a. It is possible *(for) Mike to call Tegan.
b. *(For) Mike to call Tegan would be a good thing.

Compare the following examples from Lubukusu (Diercks to appear):²

- (37) a. Ka-nyal-ikhana mbo Sammy a-la-khila ku-mw-inyawwe o-kwo. [Lubukusu]
6S-possible-STAT that 1Sammy 1S-FUT-win 3-3-game DEM-3
'It is possible that Sammy will win the game.'

² These data are replicated in Swahili and Digo in (Diercks to appear).

b. Ka-nyal-ikhana Sammy khu-khila ku-mw-inyawe o-kwo.
 6S-possible-STAT 1Sammy INF-win 3-3-game DEM-3
 'It is possible for Sammy to win the game.'

(38) a. Sammy khu-khila ku-mw-inyawe o-kwo khu-la-sanga-sya mawe. [Lubukusu]
 1Sammy INF-win 3-3-game DEM-3 15S-FUT-please-CAUS mother
 'For Sammy to win the game will please his mother.'

b. Ba-ba-ana khu-khw-ola muchuli khu-la-m-bukiya.
 2-2-children INF-INF-arrive tomorrow 15S-FUT-1stSG.O-surprise
 'For children to arrive tomorrow will surprise me.'

Explaining Properties (i)-(v): Bantu languages do not have Case features.

(39) Case Parameter: Uninterpretable Case features are/are not present in a language

IV. Outline of the Project

A. Empirical Domains

The existing work on DP distribution which is cited in this presentation is essentially a snapshot of a small subset of African languages. While this work leads to the definitive conclusion that traditional theories of DP licensing and DP distribution are insufficient, we have yet to discover the extent of variation in DP-licensing mechanisms that occurs across African languages.

(40) Two empirical foci

- (i) Generalizations in patterns of DP distribution across African languages
- (ii) Variation between languages in construction-specific realizations of the general trends

Illustration of focus (ii): Variant Hyper-raising constructions:

Apart from the core hyper-raising constructions discussed above, there are a range of constructions related to perception verbs that need to be documented and their implications explored. Below are reported several constructions that have been uncovered, but for which the full range of their properties has not been established:

(41) a. e-fwana oli Tegani a-akwa [Lubukusu]
 9SA-seem like T. 1SA-fell
 'It seems like Tegan fell.'

b. Tegani a-fwana oli o-w-akwa
 T. 1SA-seem like 1C-AAE-fell
 'Tegan seems like she fell.'
 [Lit: My sister seems like fell]

(42) sii-tabu si-fwana oli Anangwe a-a-*(si)-soma [Lubukusu]
 7-book 7SA-seems like Anangwe 1SA-PST-7OA-read
 'The book seems like Michael read it.'

(43) a. mukoma wangu a-nenge a-donha³ [Shona]
 1sister 1my 1SA-seems 1SA-fell
 'My sister seems to have fallen.'
 [Lit: My sister seems (that) fell.]

³ These data come from Diercks and Carstens (in progress), an expansion of Carstens and Diercks (to appear). Thanks to Blessing Havana and Anna Bax of Pomona College for their assistance in discovering the Shona data.

- b. a-nenge mukoma wangu a-donha
 1SA-seems 1sister 1my 1SA-fell
 'It seems that my sister fell.'
 [Lit: (she) seems my sister fell]

Summary of empirical areas to be investigated

(44) Hyperagreement Contexts:

- Multiple agreement in compound tense constructions
- Multiple agreement in raising constructions

(45) Hyperactivity Contexts:

- Hyper-raising in perception verbs
 - o Subject-to-subject raising
 - o Object-to-subject raising
 - o Super-raising
 - o Different agreement possibilities (e.g. AAEs in raising contexts)
- Hyper-raising in passive raising
- Subject-Object Inversion constructions

(46) Case-related distributional contexts:

- Overt subjects of infinitives
 - o *possible*-constructions
 - o Raising-to-object (ECM) contexts
 - o Non-finite clausal subjects
- Inversion constructions (e.g. OVS, locative inversion)
- Impersonal passive constructions
- Contrasts between DPs and CPs in distribution (passive constructions)

B. Theoretical Domains

- i. The role of Case features and Case Theory
- ii. Agreement
- iii. DP Activity
- iv. Activity features and the theory of activity
- v. Gender as an Activity feature

Methodology and plans

- Questionnaire-based study, following the general methodology of the Afranaph project, where linguists who are native speakers of African languages work with us to develop a Case Study of DP distribution in their language
- An outline for a Questionnaire is included in the Appendix
- The Afranaph methodology is very useful for the questions under investigation here: the core patterns have already been argued for based on limited data, but there is much to be learned from a systematic crosslinguistic investigation:
 - o the variety in the realizations of these constructions across languages
 - o which properties co-vary across languages (and which do not)
- CORAL—Center for Online Research on African Languages—is envisioned as a database with a web interface that utilizes existing Afranaph architecture. CORAL is being developed by Michael Marlo and Vicki Carstens at the University of Missouri, with a number of external collaborators.
- CORAL is envisioned to include this work on DP distribution, as well as questionnaire-based studies of verbal tonology of Bantu languages.

- Collaborators in two different field research stations in Africa
 - Justine Sikuku at Moi University, Kenya
 - Loyiso Mletshe at the University of West Cape, South Africa
- Various collaborators will travel to points in Africa during research leaves, including Vicki Carstens and Michael Diercks

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Collaborator Contact Information:

Vicki Carstens, University of Missouri, CarstensV@missouri.edu
 Michael Diercks, Pomona College, michael.diercks@pomona.edu
 Juvénal Ndayiragije, University of Toronto, juvenal@utsc.utoronto.ca
 Justine Sikuku, Moi University, jastinosikuku@yahoo.com

Appendix: Sample Questionnaire Items

Part I. DP subjects of infinitives

Please translate the following items literally, taking care to use an infinitival verb form in the bracketed clause. Is the result well-formed?

1. It is believed [John to like Mary].
2. It is possible [Mary to see John].
3. [Mary to see John] would surprise me
4. [Our friends to hear this] would be embarrassing.
5. There is a rumor [Mary to like beer].

Part II.A Raising

Please translate the following items literally, taking care to use a tensed or infinitival verb form in the bracketed clauses to match the sentences you are translating. Are the results well-formed in the scenarios described?

- A. *You are a detective investigating a crime scene. You know that Mary wears shoes that leave a specific pattern on the ground. Upon seeing footprints with this pattern, can you say the following?*
1. It seems [that Mary was here].
 2. Mary seems [was here].
 3. Mary seems [that was here].
 4. Mary seems [to have been here].
- B. *You are reading tomorrow's weather forecast in the newspaper. Can you say:*
1. Rain will fall tomorrow.
 2. It seems that rain will fall tomorrow.
 3. Rain seems [will fall tomorrow].
 4. Rain seems [that will fall tomorrow].
 5. Rain seems [to be going to fall tomorrow].
- C. *You find that the watering hole the cows usually drink from is dry. Without seeing the cattle, can you say:*
1. It seems [that the cows have drunk all the water].
 2. The cows seem [to have drunk all the water].
 3. The cows seem [have drunk all the water].
 4. The cows seem [that have drunk all the water].

If native speaker linguists on this project can think of expressions with idiomatic subjects to try in raising constructions like (*The cat seems to be out of the bag*), it would be great, though these are language particular and hard for people to come up with on demand.

Part II.B Passive raising. Please provide literal translations and grammaticality judgments.

1. It is known that Mary likes coffee.
2. Mary is known [likes coffee].
3. Mary is known [to like coffee]

1. It is known that John will leave.
 2. John is known [will leave].
 3. John is known [to be going to leave].
-
1. It is believed that the rabbit is hiding in the forest.
 2. The rabbit is believed that is hiding in the forest.
 3. The rabbit is believed to be hiding in the forest.

Part III. Objects of passive verbs. Are these sentences licit? Please translate and comment.

1. There was seen a car here yesterday.
2. There was built a house in the field.
3. There will be given the students a test tomorrow.
4. There fell a tree.
5. There spoke two women at the conference.

Part IV. Multiple subject agreement

1. The farmers will be harvesting the maize tomorrow.
2. The farmer will be harvesting the maize tomorrow.
3. The bird was singing in the tree yesterday.
4. The birds were singing in the tree yesterday.
5. We will have eaten already when you get home.
6. She had been working for 2 hours.

Part V. ECM

1. I want John to leave
2. I want that John to leave.
3. I want that John should leave.
4. I want very much John to leave
5. I want John very much to leave
6. I want very much that John should leave.
7. I want John very much that should leave.
8. I want very much that John to leave
9. I want John very much that to leave
10. I want him to leave [OM on matrix verb]
11. I want him that to leave [OM on matrix verb]
12. I want-him very much that to leave [OM on matrix verb]
13. I want him very much that should leave.

Part VI. Wh-agreement in source clause of subject raising

1. John cooked the chicken.
2. Who cooked the chicken?
3. The student read the book.
4. Who read the book?

Is there any special agreement form that appears in 2 and 4 that does not appear in 1 and 3? If not, move on to the next section. If so, please consider these additional questions. Recall the questions from section IIA above:

5. Mary seems [was here].
6. Mary seems [that was here].

Is it possible to form the sentences which you gave for the examples listed above with the special agreement forms that appear in 2 and/or 4?

Part VII. Super-raising

A. Subject of deeply embedded clause

1. It seems like the students know that the teacher is sick.
2. The teacher seems like the students know he is sick.

Additional question: If you can say a sentence like in #2, can you use this in a context where you are not actually looking at the teacher, for example, if you are talking to the students but the teacher is absent? Or is it only appropriate if you are actually looking at the teacher?

3. It seems like her husband wants the woman to leave.
4. The woman seems like her husband wants her to go.

Additional question, like above: If you can say a sentence like in #4, can you use this in a context where you are not actually looking at the woman, for example, if you are talking to the husband but the woman is absent? Or is it only appropriate in reaction to the woman or evidence of her behavior?

B. Object super-raising

Is it possible to say 1?

1. The food seems that Mary cooked (it).

If you answer “yes”, please consider what are felicitous contexts for this utterance. Can you say it if:

- A. You taste the food and recognize her favorite ingredient?
- B. You see Mary in an apron and deduce from this that she did the cooking?
- C. Mary is an incredibly messy cook, and from the state of the kitchen you can't imagine anyone else being responsible?

Part VIII. DP/CP Contrasts

1. The people believed that John left
2. The people believed John's story
3. It is believed that John left.
4. It is believed John's story
5. John ate the banana.
6. The banana was eaten.
7. John said that the farmers harvested the maize
8. That the farmers harvested the maize was said.
9. John told Mary that the farmers harvested the maize yesterday.
10. Mary was told that the farmers harvested the maize.
11. That the farmers harvested the maize was told Mary.

Part IX. Inversion Constructions

A. Locative Inversion

1. A tree fell in the forest.
2. In the forest fell a tree.
3. A child jumped into the field
4. Into the field jumped a child.
5. A bird sang on the tree.
6. On the tree sang a bird.

(Try both 5 and 6 with and without the applicative)

(For all of these inversions, can the verb subject-agree with the fronted locative? Can it subject-agree with the postverbal logical subject?)

B. Subject-Object Inversion (OVS)

1. Children drank the milk.
2. The milk drank the children (not the parents).
3. John read the books.
4. The books read John (not Peter).