OBJECT MARKERS ARE REFLEXES OF MOVEMENT IN SHEKGALAGADI

REBECCA EVERSON
University of Rochester

Abstract. In this paper, I propose that object markers (OMs) in Shekgalagadi are reflexes of object movement to a right-dislocated position. I present prosodic and morphological evidence of dislocation and argue that OMs influence interpretation more than corresponding nominal objects in ditransitive constructions. I also explore the pronominal "force" of OMs (Buell 2008:2) and whether DPs can only be dislocated if they are specific, or whether interpretation of specificity is dependent on their position at LF (Baker & Kramer 2018; Diesing 1992). I show that a speaker's interpretation of a sentence containing an indefinite object DP changes depending on whether the object remains in-situ or is moved to the dislocated position, and that the dislocated position allows a specific reading. I conclude by proposing that movement to a dislocated position is A-bar movement.

Keywords. Object marking; Double object constructions; A'-movement; Agreement; Object dislocation

1 Introduction

Bantu languages are highly agglutinative with rich verbal morphology and nominal agreement systems (Kisseberth & Odden 2003; Van der Wal 2022). Bantu verbal complexes encode predicative information in predictable "slots" (Güldemann 2003). Nominal agreement typically takes the form of prefixes on a verb stem and shows ϕ-features, such as person, number, and gender (Van der Wal 2022). Subject (SM) and object (OM) markers have different syntactic functions across Bantu languages, and may co-occur with a nominal argument in the same clause, potentially signaling agreement, or as a pronominal clitic with no co-referential nominal (Zeller 2014:348). Determining whether a subject or object marker is an agreement morpheme or an incorporated pronoun is difficult given its wide cross-linguistic variation and theories that account for confounding surface-level evidence, such as pro-drop for agreement markers that occur without a nominal DP, and clitic doubling for markers that occur in the same clause as their corresponding nominal DP (Baker & Kramer 2018; Riedel 2009; Rizzi 1986; Marten & Kula 2012).

In this paper, I propose that object markers (OMs) in Shekgalagadi are reflexes of object movement to a right-dislocated position. I also explore the pronominal "force" of OMs[1] (Buell 2008:2) and whether DPs can only be dislocated if they are specific, or whether interpretation of specificity is dependent on their position at LF (Baker & Kramer 2018; Diesing 1992). I focus on object marking because, compared to subject marking, object marking is "more restricted in its distribution and much less uniform across Bantu [languages]" (Riedel 2009:41). I begin by discussing typological and agreement properties of Shekgalagadi that are relevant to the current study and introduce Agree, which is parameterized to have upward probing in this language (Section 2). I

---

[1] I use Buell's (2008) term "force" to illustrate that an OM may be interpreted as a pronoun used in place of a DP that has already been introduced in the discourse.

present prosodic and morphological evidence to show that nominal objects that have a corresponding OM are right-dislocated, and show that these right-dislocated objects have flexible ordering in ditransitive constructions. Given these facts, I propose that movement to this position is triggered by an EPP feature on a head that is a complement to TP, and that the movement is based on an anti-focus[2] feature on the object DP, which accounts for apparent locality violations in ditransitive constructions (Section 3). I then explore the syntax-semantics interface to explain the pronominal force that OMs have in Shekgalagadi by testing indefinite DPs that have overt ϕ-features in object positions (Section 4). I conclude by proposing that movement to the dislocated position may be A-bar movement given the need for reconstruction for variable binding, interpret results from other tests for A-bar movement, which are inconclusive, and summarize my analysis that OMs are reflexes of movement to a dislocated position (Section 5).

The data presented in this paper were elicited from a Shekgalagadi speaker, Kamogelo Mokgosi, who lives in Ncamasere, Botswana. He speaks the under-described Tjhauba variety of Shekgalagadi. In the first few elicitation sessions I asked him to translate sentences from English into Shekgalagadi. In later sessions I constructed my own Shekgalagadi sentences and asked him to judge the grammaticality of them. I provided contexts for each sentence to better understand how to interpret them. For example, when eliciting *Mosadi obidihayo* 'The woman gives it to them', I prompted him with "What does the woman do with the food and the dogs?" During grammaticality judgements, I used paradigms of examples to investigate where OMs may be used. These included adding and removing OMs from elicited sentences and using the conjunctive and disjunctive (labeled as DJ in the following examples) forms of verbs. Elicitations were conducted over Zoom and are publicly accessible with open access in the Shekgalagadi corpus in the Endangered Languages Archive (Everson 2023).

2   Properties of Agreement in Shekgalagadi

Verb stems in Shekgalagadi (ISO 639-3 xkv, Sotho-Tswana) consist of a verb root followed by a prefinal slot, which encodes tense, aspect, and mood (TAM) and extensions (which are used to form, for example, the applicative, passive, and reciprocal forms of Bantu verbs), and a final vowel that also encodes TAM (Güldemann 2003; Eberhard et al. 2022; Lukusa & Monaka 2008). The stem can be preceded by prefixes that encode subject and object marking[3], as well as additional TAM morphemes[4]. Shekgalagadi verbal complexes have obligatory subject-marking regardless of the presence of a nominal subject, as evidenced by the ungrammaticality of (1-c). Object marking is seemingly optional, since an OM can co-occur with a nominal object, as in (1-e); be absent in the presence of a nominal object, as in (1-a); or be present in the absence of a nominal object, as in (1-d).

---

[2] Anti-focus is a feature that marks the discourse status of a DP (Zeller 2014; Cheng & Downing 2009). A DP marked with anti-focus does not introduce new information in the discourse.

[3] In the following examples, SMs are represented by a number. This represents the agreement class of the subject. OMs are glossed with a number, which is the object's agreement class, followed by OM.

[4] Pre-stem TAM morphemes are slotted between the SM and OMs (Crane 2009).

(1) a. mo-sadi   o-gy-a   bi-gyo
        1-woman 1-eat-FV.PRES 8-food
        'The woman eats food.'
    b. o-gy-a   bi-gyo
        1-eat-FV.PRES 8-food
        'She (cl 1) eats food.'
    c. *mo-sadi gy-a   bi-gyo
        1-woman eat-FV.PRES 8-food
        Intended: 'The woman eats food.'
    d. mo-sadi   o-bi-gy-ayo
        1-woman 1-8.OM-eat-DJ.PRES
        'The woman eats it (cl 8).'
    e. mo-sadi   o-bi-gy-ayo   bi-gyo
        1-woman 1-8.OM-eat-DJ.PRES 8-food
        'The woman eats it (cl 8), food.'

When SMs and OMs co-occur with a nominal DP, they show ϕ-feature agreement (in gender and number) with their corresponding DP. In the agreement operation, or Agree, a head probes for a DP goal that can satisfy its unvalued features (Chomsky 2000). Baker (2008) argues that Bantu languages are parameterized to have upward Agree probing. (2) demonstrates how the verbal complex in (1-a) receives agreement. Since the subject has moved to a position higher in the structure than the probe on T, it can value T's ϕ-feature. The object remains in-situ in a low position, therefore making it not eligible for feature valuation.

(2)
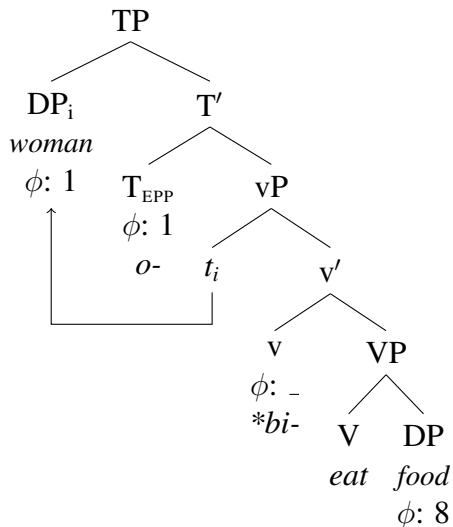
The function of OMs in Bantu languages is heavily discussed in typological and comparative research (Downing & Marten 2019; Van der Wal 2022; Baker & Kramer 2018). Downing & Marten theorize that there are 3 diachronic stages of an OM's function:

- Stage I: Purely anaphoric, can appear and co-refer with dislocated DP (sometimes classified as an incorporated pronominal clitic (Bresnan & Mchombo 1987; Bresnan & Moshi 1990)).

- Stage II: Anaphoric and agreement, can occur alone or with a co-referential DP, obligatorily present.

- Stage III: Purely agreement, cannot appear alone (2019:278).

Working under this generalization, it would seem that a language like Shekgalagadi, which has 'optional' object marking, would have purely anaphoric OMs. However, as Rizzi (1986) observes in Italian, an OM without a corresponding DP may still be an exponent of agreement with a null *pro* that has ϕ-features but no phonological realization. A better theory of this seemingly optional object marking, which I will use to analyze Shekgalagadi OMs in this paper, is that Agree and EPP are linked in Bantu languages (Carstens 2005; Pietraszko 2023) and OMs are reflexes of object movement to a dislocated position (Zeller 2014). This object can either be an overt nominal object or null *pro*. In both instances, the OM has the "force" of a pronominal clitic, meaning that it is anaphoric (Buell 2008:2).

3   Object Markers Agree with Dislocated Objects

Understanding the structure of a sentence with OMs and nominal objects in the same clause is imperative to the hypothesis presented here. To show that nominal objects with corresponding OMs are dislocated, I use prosodic and morphological evidence (Section 3.1) in addition to adjunct-like flexibility in nominal object ordering (Section 3.2). I then provide two theories of object movement to explain the relationship between OMs and nominal objects (Section 3.3).

3.1   Prosodic and Morphological Evidence of Dislocation

In Sotho-Tswana languages, as well as other Southern Bantu languages like Zulu, certain tenses have verbal morphology that encode conjunctive (conjoint, or short) or disjunctive (disjoint, or long) verb forms (Zeller 2014; Downing & Marten 2019; Creissels 1996; McCormack 2008). In Zulu, the conjoint form "is only possible...when the verb is followed by vP-internal material" (Zeller 2014:352), while the disjoint form indicates that there are no other vP-internal constituents. Example (3) demonstrates the conjoint form of the verb 'fall' with an overt object DP.

(3)   ke-b-a   ∅-buka]$_{vP}$
       1SG-drop-FV.PRES 9-book]$_{vP}$
       'I am dropping the book.'

Examples (4) and (5) demonstrate that, in the present tense, Shekgalagadi disjoint verbs have the suffix *-ayo-/-ago-*. The argument that nominal objects in constructions with disjoint verb forms are not in vP's domain is further supported by a prosodic break at the edge of vP. For example, in (5), there is a prosodic break between the verb and the object.

(4)   ke-i-b-ago
       1SG-9.OM-drop-DJ.PRES
       'I am dropping it (cl 9).'

(5)   ke-i$_i$-b-ago   ]$_{vP}$ ∅-buka$_i$
        1SG-9.OM-drop-DJ.PRES]$_{vP}$ 9-book
        'I am dropping it, the book.'

Example (6) shows that a sentence-final verb cannot be in the conjoint form. There is no OM in a transitive sentence with the conjoint verb form.

(6)   *ke-i-b-a
        1SG-9.OM-drop-FV.PRES
        Intended: 'I am dropping it (cl 9).'

In contrast with the above examples, in example (7), the speaker interprets a sentence with an OM, the conjoint verb form, and a vP-internal nominal object as adding a surplus constituent. The intended meaning of 'I am dropping the book' is not a valid interpretation. I constructed this sentence and Kamogelo mentioned that it was a sentence that "no Shekgalagadi speaker would say that way" with the intended meaning of 'drop,' but given that he could still interpret a meaning (and he didn't deem it ungrammatical, as with other sentences), I have marked it with #.

(7)   #ke-i$_i$-b-a t_i ∅-buka$_{*i/j}$]$_{vP}$ *pro$_i$*
        1SG-9.OM-drop–FV.PRES t_i 9-book   ]$_{vP}$ *pro$_i$*
        'I am putting it (cl 9) on the book./*I am dropping the book.'

This interpretation of (7) shows that an OM can't correspond to a vP-internal object, showing that objects must be right-dislocated, as in (5).

3.2   Ditransitive Verbs Show Flexible Object Ordering

Shekgalagadi is a symmetric object marking language (Van der Wal 2022). Indirect objects (IOs) and direct objects (DOs) are targets for agreement, as the examples in (8) show. The Shekgalagadi verbal complex supports up to 3 OMs (Crane 2009). In ditransitives, IO and DO can be dislocated and can be swapped, but OM order is fixed for an intended interpretation. Example (8-a) shows that a verb can support both OMs for the IO and DO, and that the DO OM precedes the IO OM. (8-b) shows that it is possible to have one dislocated nominal object and one *pro* and maintain the intended interpretation. Examples (8-c) and (8-d) demonstrate that the ordering of the dislocated nominal objects doesn't effect the interpretation of the sentence, but (8-e) shows that reordering the OMs does.

(8)   a.   mo-sadi   o-bi-ba-h-ayo
              1-woman 1-8.OM-2.OM-give-DJ.PRES
              'The woman gives it (cl 8) to them (cl 2).'
        b.   mo-sadi   o-bi-ba-h-ayo   ]$_{vP}$ bo-manchwe
              1-woman 1-8.OM-2.OM-give-DJ.PRES]$_{vP}$ 2a-ostrich
              'The woman gives it (cl 8) to them (cl 2), the ostriches.'
        c.   mo-sadi   o-bi-ba-h-ayo   ]$_{vP}$ bi-gyo bo-manchwe
              1-woman 1-8.OM-2.OM-give-DJ.PRES]$_{vP}$ 8-food 2a-ostrich
              'The woman gives it (cl 8) to them (cl 2), the food to the ostriches.'

d. mo-sadi   o-bi-ba-h-ayo   ]$_{vP}$ bo-manchwe bi-gyo
    1-woman 1-8.OM-2.OM-give-DJ.PRES]$_{vP}$ 2a-ostrich   8-food
    'The woman gives it (cl 8) to them (cl 2), the ostriches the food.'
e. #mo-sadi o-ba-bi-h-ayo   ]$_{vP}$ bo-manchwe bi-gyo
    1-woman 1-2.OM-8.OM-give-DJ.PRES]$_{vP}$ 2a-ostrich   8-food
    'The woman gives it (cl 8) them (cl 2), the ostriches to the food.'

Examples (8-c) and (8-d) seemingly contradict a widely observed pattern in languages that allow multiple OMs, which is that "the order of object markers is the mirror image of the order of the corresponding overt NPs following the verb" (Marten & Kula 2012:15). Marten & Kula also discuss a set of Tswana examples similar to (8-c) and (8-e), and argue that "the order of object markers in Tswana is not strictly determined, but structurally free (although possibly associated with differences in pragmatic interpretation). It could still be argued that this is a mirror image in some sense, since the order of post-verbal full NPs is structurally unrestricted in Tswana as well, but this could also be taken to show that the order of neither object NPs nor object markers is strictly fixed" (2012:15). In their paper, however, they do not consider examples where the OM order and overt DP order are not mirror images, as in example (8-c). I hypothesize that (8-c) and (8-d) still conform to Marten & Kula's mirror generalization, and that the OMs in Shekgalagadi mirror the base-generated positions of the object DPs. Future work includes investigating the underlying structure of multiple dislocated DPs.

Ditransitive constructions also create an environment to test for locality restrictions on object dislocation. The canonical word order in Shekgalagadi is S V ((IO) DO). According to the theory of Agree as proposed by Chomsky (2000), a head will agree with its most local (structurally closest c-commanded) target. Example (9) demonstrates that an IO (in this case, a null pronoun), which is more local to the verb, is dislocated and object-marked, which is expected under this theory. However, (10) shows that the DO, which is not the most local DP, may also be dislocated and object-marked.

(9)   mo-sadi   o-mo-h-a t_i bi-gyo]$_{vP}$ *pro$_i$*
      1-woman 1-1.OM-give-FV.PRES t_i 8-food]$_{vP}$ *pro$_i$*
      'The woman gives him (cl 1) food.'

(10) mo-sadi   o-bi-h-a   mo-lola t_i]$_{vP}$ *pro$_i$*
      1-woman 1-8.OM-give-FV.PRES 1-man t_i]$_{vP}$ *pro$_i$*
      'The woman gives it (cl 8) to the man.'

To account for this apparent locality violation, movement must be driven by a feature on a DP rather than locality alone. In the following subsection, I discuss the mechanics of object dislocation. I explore two proposed theories of object dislocation in a related language, Zulu, and apply them to Shekgalagadi data.

3.3   The Mechanics of Object Dislocation

Zeller (2014) proposes that objects originate in a low structural position and move to a position higher than vP, enabling upward Agree probing. His proposal includes a category (labeled as X)

between vP and T to house the moved object, as shown in (11).

(11)   Proposed structure from Zeller (2014) (AF = Anti-Focus):

```
                          TP
                ┌─────────┴─────────┐
              DP_i                  T′
               I          ┌─────────┴─────────┐
            φ: 1SG      T_EPP                 XP
                        φ: 1sg       ┌─────────┴─────────┐
                         ke-        X′                  DP_j
                               ┌─────┴─────┐            book
                           X_EPP+AF       vP           φ: 9
                             φ: 9      ┌───┴───┐        +AF
                              i-      t_i      v′
                                          ┌────┴────┐
                                          v        VP
                                              ┌─────┴─────┐
                                              V          t_j
                                            drop
```
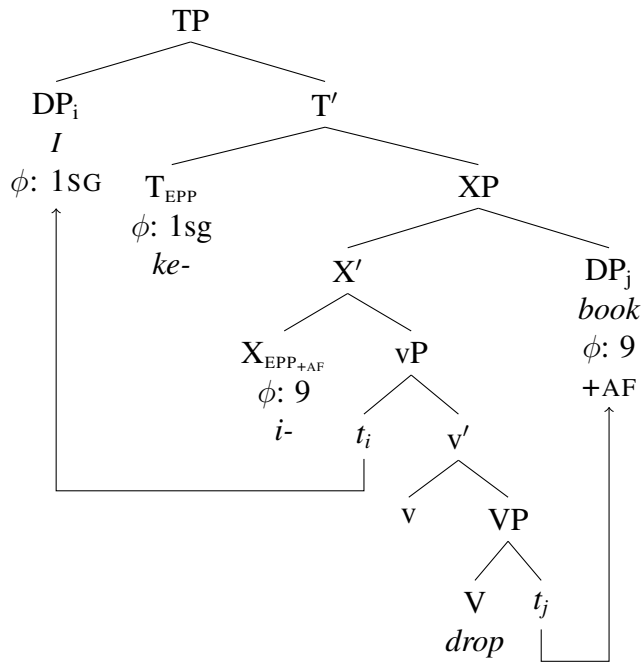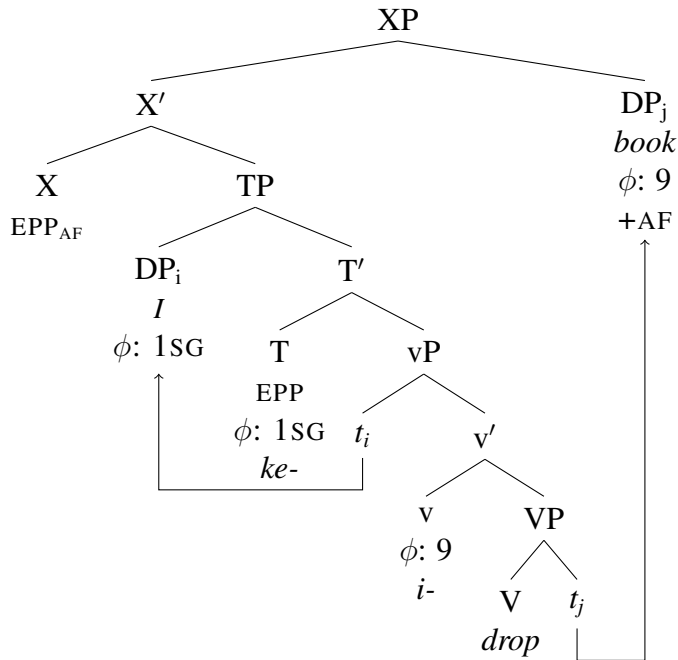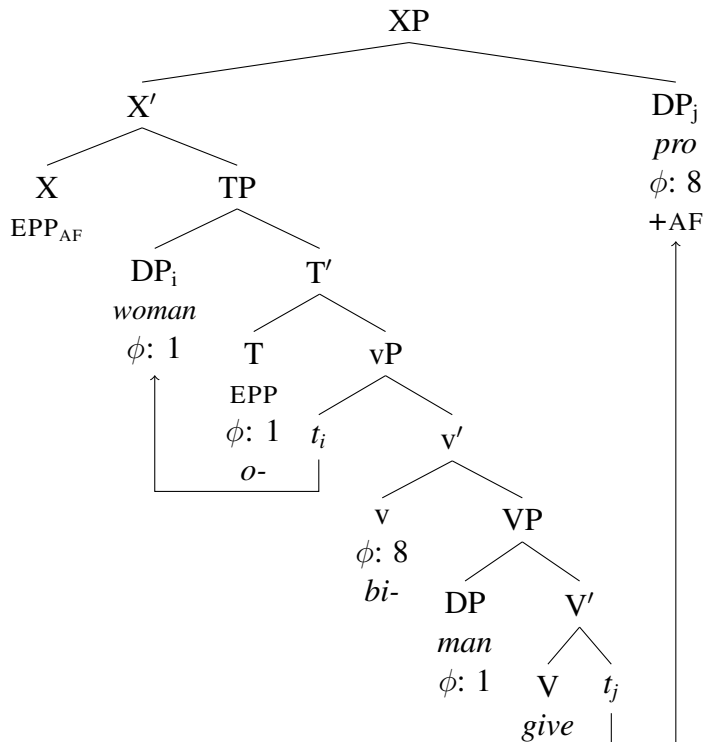
While this proposal provides the necessary structure to allow agreement with an object DP, it requires an order of operations to ensure that the subject DP occupies SpecTP before object dislocation occurs, since the dislocated object position is higher than the base-generated subject position. For this reason, I adopt Pietraszko's (2023) proposed structure instead, shown in (12).

(12)   Proposed structure from Pietraszko (2023:34):

```
                                    XP
                        ┌───────────┴──────────────┐
                       X′                          DPⱼ
                 ┌──────┴──────┐                   book
                 X            TP                   φ: 9
               EPP_AF    ┌─────┴─────┐             +AF
                        DPᵢ          T′
                         I      ┌────┴────┐
                       φ: 1SG   T         vP
                              EPP    ┌─────┴─────┐
                            φ: 1SG  tᵢ          v′
                             ke-           ┌─────┴─────┐
                                           v          VP
                                         φ: 9     ┌────┴────┐
                                          i-      V        tⱼ
                                                 drop
```

This AF-probing analysis allows the apparent minimality violation in sentence (10), in which a DO object-marks across a nominal IO. The tree in (13) adapts Pietraszko's (2023) proposed structure to a ditransitive verb with an OM and dislocated DO.

(13)   Tree for sentence (10):

```
                                    XP
                        ┌───────────┴──────────────┐
                       X′                          DPⱼ
                 ┌──────┴──────┐                   pro
                 X            TP                   φ: 8
               EPP_AF    ┌─────┴─────┐             +AF
                        DPᵢ          T′
                       woman    ┌────┴────┐
                       φ: 1     T         vP
                              EPP    ┌─────┴─────┐
                             φ: 1   tᵢ          v′
                              o-           ┌─────┴─────┐
                                           v          VP
                                         φ: 8     ┌────┴────┐
                                          bi-     DP        V′
                                                 man     ┌──┴──┐
                                                 φ: 1    V     tⱼ
                                                        give
```

28

The sentences in example set (8) show that multiple objects may be dislocated. In this scenario, the order of OMs matters for interpretation, while the order of corresponding nominal objects may mirror the OMs, as expected, or be in the inverse order. This sets Shekgalagadi apart from related languages like Zulu, in which only the IO can control agreement when both objects are dislocated (Pietraszko 2023:36). In Shekgalagadi, the EPP feature and the ϕ-agreement probe are both insatiable (Pietraszko 2023; Deal 2015). The flexibility in dislocated object ordering is difficult to account for in Pietraszko's (2023) movement-based theory. Perhaps the SpecXP position contains an unordered set of DPs that have been dislocated. Under this hypothesis, dislocated DOs and IOs are structurally equivalent and can be pronounced in any order.

The observable prosodic break between vP-internal material and dislocated objects mentioned in Section 3.1 and the flexibility in dislocated nominal object ordering in 3.2 suggest that OMs, or structures that allow object agreement, affect the interpretation of a sentence. Exploring the interface between syntax and semantics may enhance the current theory and account for the flexibility observed here. In the following section, I discuss the relationship between object position at LF and a speaker's interpretation of specificity. I propose that dislocated objects lead to a pronominal interpretation of OMs and show that types of nominals that are not as straightforwardly referential can be dislocated and trigger agreement on the verb (Baker & Kramer 2018).

4   The Pronominal Force of OMs is Derived from Structural Position

An underlying property of OMs that is relevant to the current study is their interpretation as pronouns at LF. The current working theory in this paper is that OMs are reflexes of object movement. However, it seems that only objects that can be interpreted as specific are eligible for this type of movement. Baker & Kramer hypothesize that "less than fully referential nominals" cannot be doubled by OMs, and argue that Amharic OMs are pronominal clitics partially because of this specificity interpretation (2018:1037). While the previous sections have made it clear that objects move from their base-generated site to the right-dislocated position, this issue of specificity should still be explored as a possible constraint.

It is likely that this observable phenomenon in which object-marked DPs are interpreted as specific is due to their structural position that allows them to Agree, rather than a feature on the DPs themselves. According to Diesing, vP "corresponds to the nuclear scope and forms the domain of existential closure" (1992:377), meaning that indefinite DPs that remain within vP at LF are interpreted as non-specific. Baker & Kramer also use this observation to diagnose the function of OMs in Amharic, as nominal objects may remain in-situ and still be doubled by corresponding pronominal clitics (2018). The arguments presented in the current study align well with this hypothesis, since movement to a dislocated position removes DPs from this existential domain, allowing moved DPs to be interpreted as specific. This also naturally explains why *pro* is always dislocated; *pro* always has the anti-focus feature, since it is a dropped pronoun. Evidence from related language Zulu also supports the hypothesis that "focused, indefinite, and bare nouns cannot be right-dislocated" (Buell 2008:10).

In this section I will show that Diesing's (1992) hypothesis accounts for the way Shekglagadi nominals are interpreted, and that the post-movement object position is what feeds an interpretation

of specificity. The types of nominals that I will use to explore this hypothesis are those which Baker & Kramer identify as "less than fully referential": universally quantified DPs (Section 4.1); indefinite NPs (Section 4.2); and interrogative DPs (Section 4.3)[5] (2018:1037).

4.1 Universally Quantified DPs

It appears that universally quantified DPs can move to the dislocated position, leaving a quantifier in-situ. Example (15) demonstrates how the nominal object in (14) can be represented by *pro* and moved to the dislocated position. The conjoint verb form suggests that the quantifier is stranded in (15), leaving it within vP. *pro* must be base-generated low to value the ϕ-features on the quantifier, then moved to a dislocated position to value the ϕ-features in the verbal complex.

(14)   ba-gya di-awu j-othe   ]$_{vP}$
        2-eat   10-fish 10.QUANT-all]$_{vP}$
        'They (cl 2) eat all the fish.'

(15)   ba-di-gya t_i j-othe   ]$_{vP}$ *pro$_i$*
        2-10.OM-eat t_i 10.QUANT-all]$_{vP}$ *pro$_i$*
        'They (cl 2) eat them (cl 10) all.'

The interpretation in (15) could still possibly be a specific reading, as if to say "They eat them all, the fish that were available to eat" rather than a generic reading of "They eat them all, the fish in the world." This flexibility in interpretation is accounted for by Diesing's (1992) theory that vP-external DPs may receive both specific and non-specific interpretations. To complete the paradigm, (16) shows how the quantified phrase with a nominal object can be fully dislocated, and (17) shows that a quantified phrase with *pro* can also be fully dislocated.

(16)   ba-di-gy-ago   ]$_{vP}$ hombe di-awu j-othe
        2-10.OM-eat-DJ]$_{vP}$ today   10-fish 10.QUANT-all
        'They (cl 2) eat them (cl 10) today, all the fish.'

(17)   ba-di-gy-ago   ]$_{vP}$ hombe *pro* j-othe
        2-10.OM-eat-DJ]$_{vP}$ today   *pro* 10.QUANT-all
        'They (cl 2) eat them (cl 10) all today.'

It is possible that the speaker's interpretation of specificity would change based on a configuration like (16) (specific due to high structural position) compared to (14) (non-specific due to low structural position), but these readings were not distinguishable during elicitations. Further examples and a larger speaker sample would improve this analysis.

---

[5] Reflexive anaphors, a fourth type explored in Baker & Kramer's paper, are excluded from the present analysis, since these constructions are formed by adding the prefix *-i-* in the OM position, and this morpheme is in complementary distribution with OMs (Lukusa & Monaka 2008:144)

4.2 Indefinite NPs and NPIs

A better test of the specificity constraint is indefinite NPs. Indefinite NPs are difficult to elicit in Shekgalagadi since there is no morphological distinction between "the dog" and "a dog." NPIs provide a good testing environment for indefinite NPs (Riedel 2009; Buell 2008). Example (18) shows that NPIs have ϕ-features, as they trigger agreement when in the subject position.

(18) di-itchwa di-pe ase-di-bwal-e   mo-lola
      10-dog   10-any NEG-10.OM-see-FV.PST 1-man
      'No dogs saw the man.'[6]

It is evident that NPI quantifiers cannot be stranded like the quantifier in (15). First, consider example (19), which shows the quantifier "any" in the object position:

(19) ase ba-bwal-e   di-itchwa di-pe
      NEG 2-see-FV.PST 10-dog   10-any
      'They (cl 2) didn't see any dogs.'

Comparing (15) (stranded universal quantifier) to (20), the NPI quantifier "any" may appear without a nominal DP, but there is no OM in the verbal complex, which shows that there is no corresponding dislocated *pro*. Therefore, it seems that *pro* and the quantifier remain in-situ:

(20) ase ba-bwal-e   *pro* di-pe]$_{vP}$
      NEG 2-see-FV.PST *pro* 10-any]$_{vP}$
      'They (cl 2) didn't see any (cl 10).'

The negation morpheme is not part of the NPI, as shown in (21). (21) also shows that an OM and null *pro* changes the interpretation to a reference to specific animals.

(21) ase ba-di-bwal-e
      NEG 2-10.OM-see-FV.PST
      Intended: 'They (cl 2) didn't see any (cl 10, non-specific).'
      Interpreted: 'They (cl 2) didn't see them (cl 10, referring to specific animals people were looking for).'

An OM and a dislocated NPI phrase yields an ungrammatical sentence. This is likely due to the specificity interpretation that dislocated objects receive, and in (22), a reading where the DP is specific isn't possible.

(22) *ase ba-di-bwal-e   di-pe
      NEG 2-10.OM-see-FV.PST 10-any
      Intended: 'They (cl 2) didn't see any (cl 10).'
      Interpretation[7]: "They have seen them, nothing."

---

[6] The past tense doesn't have morphological markers signifying conjoint or disjoint forms. It is possible that there is a tonal distinction, as proposed by Chebanne et al. (1997).

[7] Kamogelo gave this interpretation and said that it is not an acceptable sentence because the OM is referring to something that doesn't exist.

Buell notes that "the fact that some NPIs are clearly VP-external further shows that bare nouns must remain inside the VP not in order to be licensed by negation, but due to some other property such as indefiniteness, non-givenness, or focus" (2008:10). As observed by Diesing (1992), the structural position of a DP determines its definite or indefinite interpretation, and NPIs in Shekgalagadi that can't be interpreted as specific appear to not be eligible for movement to the dislocated, structurally high position.

4.3 Interrogatives

Shekgalagadi interrogatives are DPs that clearly have ϕ-features, as they trigger subject agreement. (23) and (24) show this agreement, and demonstrate that the ϕ-features are those that are inherent to the lexical items "who" and "what (sg)" respectively.

(23)   ke   anyi **yo**   **o**-go-relesh-el-ayo
        COP who 1.LINK 1-2SG.OM-cook-APPL.DJ
        'Who cooks for you?'
        Lit: 'Who is it that he/she cooks for you?'

(24)   ke   enyi **she**   **shi**-gy-a ma-bele   mo-tshimo-ng
        COP what 7.LINK 7-eat-FV 6-sorghum 18-field-LOC
        'What is eating the sorghum in the fields?'
        Lit: 'What is it that it (cl 7) eats the sorghum in the fields?'

Interrogative object DPs may remain in-situ, as shown in (25) and (26). In (26), as with the similar declarative example (7), the OM is interpreted as an additional constituent rather than as co-referential with the nominal object interrogative DP.

(25)   o-relesh-el-a   anyi ∅-nama
        2SG-cook-APPL-FV who 9-meat
        'Who do you cook meat for?'
        Lit: 'You cook who meat?'

(26)   #o-shi-gya   enyi
        2SG-7.OM-eat what
        'What part do you eat of it (cl 7)?/*What (cl 7) do you eat?'

Interrogative constructions may involve clefting question words in Shekgalagadi. This process moves the content of the question into a relative clause, similar to Chichewa (McCormack 2008:109). Clefted interrogative nominals have corresponding OMs, as in (27)-(29). (27) and (28) show a singular and plural pairing of the interrogative that is the equivalent of 'what' in English. (29) shows that the OM must be present in the relative clause for grammaticality.

(27)   ke **enyi** she   mo-sadi o-**shi**-go-h-ayo
       COP what 7.LINK 1-woman 1-7.OM-2SG.OM-give-DJ
       'What (cl 7) is it that the woman is giving you?'
       Lit: 'What is it that the woman is giving you it (cl 7)?'

(28)   ke **enyi** ze   mo-sadi o-**bi**-go-h-ayo
       COP what 8.LINK 1-woman 1-8.OM-2SG.OM-give-DJ
       'What (cl 8) is it that the woman is giving you?'
       Lit: 'What are these that the woman is giving you them (cl 8)?'

(29)   *ke **enyi** ze   mo-sadi o-∅-go-h-ayo
       COP what 8.LINK 1-woman 1-∅-2SG.OM-give-DJ
       Intended: 'What (cl 8) is it that the woman is giving you?'

(27) and (28) suggest that clefted wh-words are base-generated in the complement of V and dislocated (for agreement with v). Alternatively, it is possible that clefted wh-words are base-generated in the clefted position, and the OM is agreeing with *pro* in a dislocated position. This is supported by example (30), in which a nominal object occupies this position while maintaining the intended interpretation.

(30)   ke **enyi** she   mo-sadi o-**shi**-go-h-ayo   **shi-lo**
       COP what 7.LINK 1-woman 1-7OM-2SG.OM-give-DJ 7-thing
       'What (cl 7) is the thing that the woman is giving you?'
       Lit: 'What is it that the woman is giving you the thing (cl 7)?'

Given the above examples and discussion about interpretation of specificity being designated by an object's structural position, it's possible that a sentence like (30) would be uttered in a context where the speaker watched a woman give an object to the listener, and the speaker is asking for clarification on what it is (knowing that she gave the listener something). Eliciting more examples with proper contexts would be necessary to further diagnose this interpretation.

Through these constructions involving "less than fully referential nominals," I've shown that OMs in Shekgalagadi are agreement morphemes and not incorporated pronominal clitics due to their dependency on anti-focused nominal and null objects moving to a right-dislocated position. I've also argued that Diesing's (1992) hypothesis that structurally low DPs are interpreted as focused or non-specific, while higher (dislocated) DPs take on a specific reading, holds for Shekgalagadi data.

5   Discussion

In this paper, I have argued that OMs are reflexes of object movement to a dislocated position, which is driven by an insatiable EPP feature on a head higher than T that probes for DP_{+AF}, but I haven't made any claims about what type of movement is involved. I wrap up this analysis by presenting evidence that movement to the dislocated position is A-bar movement. I also present coordinated phrase movement to show a property of agreement that hasn't been explored yet here.

5.1 A-Bar Movement

Until now, I have not diagnosed the type of movement involved in this theory. From my elicitations on universally quantified DPs, I discovered that DOs that are bound by universally quantified IOs may still be interpreted as bound when dislocated. Example (31) shows this binding.

(31) ke-bi-h-a   ∅-itchwa$_i$ i-ngwe ni   i-ngwe]$_{vP}$ hombe bi-gyo z-ayo$_i$.
   1SG-8.OM-give-FV 9-dog   9-some COORD 9-some]$_{vP}$ today   8-food 10-9.POSS.PRO
   'I am giving it to each dog today, its food.'

Reconstruction is required to make the DO 'its food' refer to each dog, since 'its food' is an anaphor DP that must be bound. In (31), this DP is outside of the binding domain of 'each dog' after movement to the dislocated position. Reconstruction for binding is a property of A-bar movement, suggesting that object right-dislocation in Shekgalagadi is A-bar movement. I attempted to further prove fact this by showing that a DO bound by an IO can be dislocated. I elicited the sentences in (32)-(34) by asking the speaker to translate "I showed Theo a video of himself." In English, the IO ("Theo") would bind an anaphor in the DO ("a video of himself"). In Shekgalagadi, an equivalent sentence is made using the possessive pronoun.

(32) ke-shup-egezize   Theo$_i$ ∅-video y-agwe$_i$.
   1SG-show-APPL.PST Theo   9-video 9-1.POSS.PRO
   'I showed Theo his video.'

(33) ke-mo$_i$-e-shup-egeziz-ego   ]$_{vP}$ hombe ∅-video y-agwe$_i$.
   1SG-1.OM-9.OM-show-APPL.PST-DJ]$_{vP}$ today   9-video 9-1.POSS.PRO
   'I showed him it (cl 9) today, his video.'

(34) ke-e-shup-egezize   Theo$_i$]$_{vP}$ hombe ∅-video y-agwe$_i$.
   1SG-9.OM-show-APPL.PST Theo   ]$_{vP}$ today   9-video 9-1.POSS.PRO
   'I showed Theo it (cl 9) today, his video.'

It is clear that "his video" is a possessive construction and not an anaphor, since it can be used sentence-initially, as in (35).

(35) ∅-video y-agwe   ya-wa.
   9-video 9-1.POSS.PRO 9-fall
   'His video (just now) dropped.'[8]

While this test is inconclusive, it does not invalidate the observation made in Section 4.1. The fact that quantified IOs may bind dislocated DOs warrants further investigation of A-bar object movement in Shekgalagadi.

---

[8] Subject markers in Shekgalagadi have different forms that "co-occur with various markers of tense, aspect, and mood" (Crane 2009:232). This marker is the immediate past class 9 SM. This also might explain why the verb doesn't have a morpheme signifying a disjoint construction, since not all tenses have this form.

5.2 Applying the Movement Theory to Coordinated Phrases

So far, I have shown that OMs agree with dislocated objects, seemingly in the order of dislocation (IOs first, then DOs in ditransitives). Because of this, OM agreement seems to happen at the same time as movement (Pietraszko 2023; Carstens 2005). Contrary to this observation, one type of movement operation creates two possible agreement targets: coordinated phrase movement. A verb may show agreement with the entire coordinated phrase or just the first conjoint. When agreeing with an entire coordinated phrase consisting of two or more nouns in different noun classes, as in (36), the agreement OM will take the form of class 2 (for coordination with an animate noun) or 8 (for coordination between 2 inanimate nouns, as in (37)).

(36) ke-but-a   mo-hakga ni   le-helo]$_{vP}$
      1SG-break-FV 3-knife   COORD 5-broom]$_{vP}$
      'I am breaking the knife and the broom.'

(37) ke-bi-but-ago   ]$_{vP}$ *pro*
      1SG-8.OM-break-DJ]$_{vP}$ *pro*
      'I am breaking them (cl 8, prompted by: "What is happening to the broom and the knife?").'

Shekgalagadi also allows agreement with the first element in a coordinated phrase, as in (38). In this instance, the coordinated phrase must be moved to the dislocated object position, as shown by the ungrammaticality of example (39). As discussed in Section 3.1, the conjoint verb form signifies that the coordinated phrase remains in-situ.

(38) ke-le$_i$-but-ago   ]$_{vP}$ le-helo$_i$ ni   mo-hakga
      1SG-5.OM-break-DJ]$_{vP}$ 5-broom COORD 3-knife
      'I am breaking it (cl 5), the broom and the knife.'

(39) *ke-le$_i$-buta   le-helo$_i$ ni   mo-hakga]$_{vP}$
      1SG-5.OM-break 5-broom COORD 3-knife   ]$_{vP}$
      'I am breaking it (cl 5), the broom and the knife.'

The first element in a coordinated phrase may be *pro*, shown in example (40). A coordinated phrase with *pro* cannot remain in-situ, which is shown in example (41). In comparison to example (17) in which a quantifier can be stranded, it seems that coordinated phrases cannot be stranded by the first conjunct. The sentence in (41) could be derived if this were possible, since *pro* could be dislocated, but coordinated phrases appear to be islands in Shekgalagadi.

(40) ke-le-but-ago   ]$_{vP}$ *pro* ni   mo-hakga
      1SG-5.OM-break-DJ]$_{vP}$ *pro* COORD 3-knife
      'I am breaking it (cl 5) and the knife.' (prompted by: "What are you doing to the broom?")

(41) *ke-but-a   ni   mo-hakga]$_{vP}$
      1SG-break-FV COORD 3-knife   ]$_{vP}$
      Intended: 'I am breaking it (cl 5) and the knife.' (prompted by: "What are you doing to the broom?")

While the first conjoint is a valid agreement target, the second is not. The ungrammaticality of (42), in which the agreement on the verb matches the second nominal conjunct, and (43), in which the second conjunct is replaced by *pro*, demonstrate this asymmetry.

(42) *ke-mo$_i$-but-ago   ]$_{vP}$ le-helo$_i$ ni   mo-hakga
      1SG-3.OM-break-DJ]$_{vP}$ 5-broom COORD 3-knife
      'I am breaking it (cl 3), the broom and the knife.'

(43) *ke-mo$_i$-but-ago   ]$_{vP}$ le-helo$_i$ ni   *pro*
      1SG-3.OM-break-DJ]$_{vP}$ 5-broom COORD *pro*
      'I am breaking it (cl 3), the broom and it.'

Example (44) shows that the entire coordinated phrase must be dislocated, and a single conjunct cannot be moved. Therefore, if the first conjunct has the +AF feature, then this feature is projected to the coordinated phrase level.
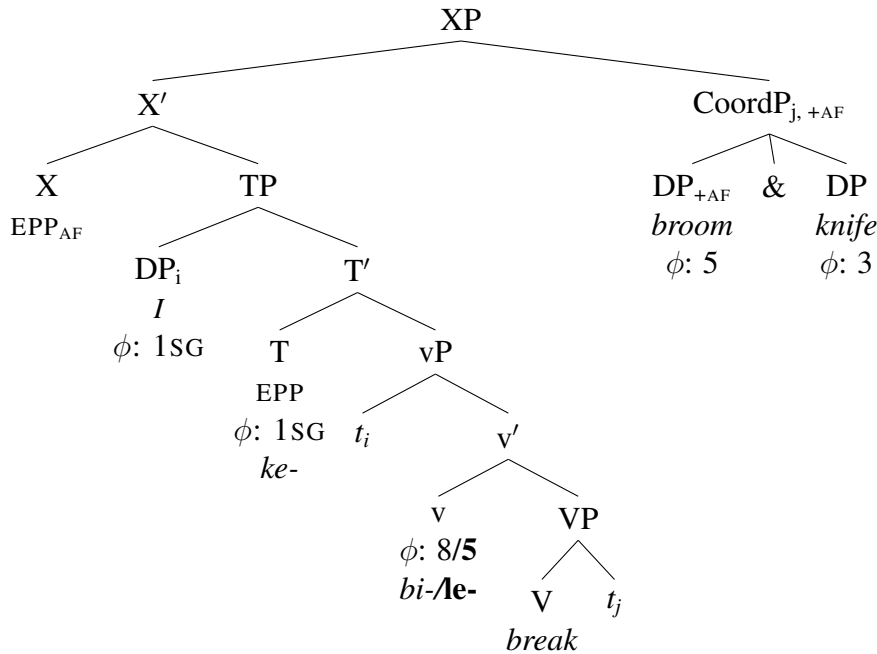
(44) *ke-le-but-a   ni   mo-hakga]$_{vP}$ *pro*
      1SG-5.OM-break-FV COORD 3-knife   ]$_{vP}$ *pro*
      Intended: 'I am breaking it (cl 5) and the knife.' (prompted by: "What are you doing to the broom?")

The puzzle here is that a dislocated coordinated phrase may have a corresponding OM that agrees with either the first conjoint, as in (38), or the whole phrase, as in (45). The OM choice is the only surface-level difference between the two sentences. The interpretation of (45) is that the speaker decided to clarify what they were talking about after using the OM to refer to both objects. Again, there is a prosodic break at the edge of vP.

(45) ke-bi$_i$-but-ago   ]$_{vP}$ le-helo$_i$ ni   mo-hakga
      1SG-8.OM-break-DJ]$_{vP}$ 5-broom COORD 3-knife
      'I am breaking them (cl 8), the broom and the knife.'

There is clearly a pragmatic reason for why a speaker would choose one OM over the other, and I've decided to not account for this in the movement theory I've adopted. However, it is important to show that agreement may occur with a conjunct of a coordinated phrase, which does not c-command the probing head, as in (46). In this tree, the probing head has to continue to probe after it has found a possible agreement target, CoordP, and stop probing before it finds a third possible target, the second conjoint. One possible theory for this behavior is that the coordination morpheme is an impenetrable boundary for Agree. Another is that, in some contexts, the phrase is interpreted as prepositional phrase "x with y" rather than conjunctive phrase "x and y", since 'ni' is used in both phrases.

(46)   Tree for (38):

```
                                    XP
                        ┌───────────┴───────────┐
                       X′                      CoordP_{j, +AF}
                ┌───────┴───────┐          ┌─────┼─────┐
                X              TP        DP_{+AF}  &   DP
              EPP_AF      ┌─────┴─────┐   broom       knife
                        DP_i         T′   φ: 5        φ: 3
                         I       ┌────┴────┐
                       φ: 1SG    T         vP
                               EPP    ┌────┴────┐
                             φ: 1SG  t_i        v′
                               ke-         ┌─────┴─────┐
                                           v           VP
                                        φ: 8/5      ┌───┴───┐
                                        bi-/le-     V       t_j
                                                  break
```

5.3   Conclusion

Section 2 provided evidence that nominal objects that have a corresponding OM are moved to a right-dislocated position. Section 3.3 showed how this movement is triggered by EPP feature that probes for a DP with +AF, which accounts for Locality violations for DOs that object-mark across nominal, in-situ IOs. I adopted Pietraszko's proposed structure for this dislocated position (2023), as shown in (12) and (13). In Section 4 I discussed the observation that OMs have the force of pronouns, and argued that this force is due to structural position (Diesing 1992) rather than a feature on a DP (Baker & Kramer 2018).

Future work on this topic should also explore a wider variety of object DPs. Nominal properties interface with object-marking differently cross-linguistically, such as animacy (Bresnan & Moshi 1990), θ-role (e.g. Theme, Benefactive) (Marten & Kula 2012), and object relatives (Marten & Kula 2012; Zeller 2014). A more comprehensive study would also include tone. Other Sotho-Tswana languages have grammatical tone (see Chebanne et al. 1997 for Setswana and Khoali 1991 for Sesotho), and this may provide further phonological evidence of dislocation. Finally, continuing to investigate the limitations of EPP and Agree is necessary due to the agreement possibilities that came to light during my investigation of coordinated phrases. I have not developed a sound theory for why agreement sometimes continues to probe after finding CoordP, but stops after the first conjunct. It is possible that there are other types of structures that can be dislocated that show similar agreement properties.

References

Baker, Mark & Ruth Kramer. 2018. Doubled clitics are pronouns: Amharic objects (and beyond). *Natural Language & Linguistic Theory* 36. 1035–1088.

Baker, Mark C. 2008. *The syntax of agreement and concord*, vol. 115. Cambridge University Press.

Bresnan, Joan & Sam A Mchombo. 1987. Topic, pronoun, and agreement in Chicheŵa. *Language* 741–782.

Bresnan, Joan & Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic inquiry* 21(2). 147–185.

Buell, Leston. 2008. Vp-internal dps and right-dislocation in Zulu. *Linguistics in the Netherlands* 25(1). 37–49.

Carstens, Vicki. 2005. Agree and epp in Bantu. *Natural Language & Linguistic Theory* 23(2). 219–279.

Chebanne, Andy Monthusi, Denis Creissels & HW Nkhwa. 1997. *Tonal morphology of the Setswana verb*, vol. 13. Lincom Europa.

Cheng, Lisa Lai-Shen & Laura J. Downing. 2009. Where's the topic in Zulu? *The Linguistic Review* 26(2-3). 207–238.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. *Step by step: Essays on minimalist syntax in honor of Howard Lasnik* 89–155.

Crane, Thera. 2009. Tense, aspect, and mood in Shekgalagari. *UC Berkeley PhonLab Annual Report* (5).

Creissels, Denis. 1996. Conjoint and disjoint verb forms in Setswana. *South African Journal of African Languages* 16. 109–115.

Deal, Amy Rose. 2015. Interaction and satisfaction in φ-agreement. In *Proceedings of nels*, vol. 45 1, 179–192.

Diesing, Molly. 1992. Bare plural subjects and the derivation of logical representations. *Linguistic Inquiry* 23(3). 353–380.

Downing, Laura J. & Lutz Marten. 2019. Clausal morphosyntax and information structure. In *The Bantu languages*, Taylor and Francis 2nd edn.

Eberhard, David M., Gary F. Simons & Charles D. Fennig (eds.). 2022. *Ethnologue: Languages of the world*. SIL International 25th edn.

Everson, Rebecca. 2023. Shekgalagadi of the Tjhauba: A documentation of culture and subsistence in the Okavango. Endangered Languages Archive. Handle: http://hdl.handle.net/2196/9022770b-448b-44c2-8179-7a4925f110b7.

Güldemann, Tom. 2003. Tone. In Derek Nurse & Grard Philippson (eds.), *The Bantu languages*, Taylor and Francis 1st edn.

Khoali, Benjamin T. 1991. *A Sesotho tonal grammar*: dissertation.

Kisseberth, Charles & David Odden. 2003. Tone. In Derek Nurse & Grard Philippson (eds.), *The Bantu languages*, Taylor and Francis 1st edn.

Lukusa, Stephen T.M. & Kemmonye C. Monaka. 2008. *Shekgalagari grammar*. The Centre for Advanced Studies of African Society.

Marten, Lutz & Nancy C Kula. 2012. Object marking and morphosyntactic variation in Bantu. *Southern African Linguistics and Applied Language Studies* 30(2). 237–253.

McCormack, Anna. 2008. *Subject and object pronominal agreement in the southern Bantu languages: From a dynamic syntax perspective*: dissertation.

Pietraszko, Asia. 2023. Timing-driven derivation of a NOM/ACC agreement pattern. *Glossa: a journal of general linguistics* 8(1).

Riedel, Kristina. 2009. *The syntax of object marking in Sambaa: A comparative Bantu perspective*: Netherlands Graduate School of Linguistics dissertation.

Rizzi, Luigi. 1986. Null objects in Italian and the theory of pro. *Linguistic inquiry* 17(3). 501–557.

Van der Wal, Jenneke. 2022. *A featural typology of Bantu agreement*. Oxford University Press.

Zeller, Jochen. 2014. Three types of object marking in Bantu. *Linguistische Berichte* 2014(239). 347–367.