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TP in Oshiwambo subject nominalizations

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Subject nominalizations have been argued to be deprived in verbal structure and lack extended verbal projections such as TP (Baker & Vinokurova 2009). We show that TP is realized in Oshiwambo (R20, Bantu) subject nominalizations. Other functional elements associated with passive, causative, and applicative constructions are observed in Oshiwambo subject nominalizations. Anaphor binding is also attested. We further demonstrate that subject nominalizations are different from reduced and headless relative clauses. An implication of this work is that Oshiwambo subject nominalizations are best described under a phrasal layering approach (Alexiadou & Schäfer 2010, among others) and that their syntactic size can be as articulated as a finite clause.



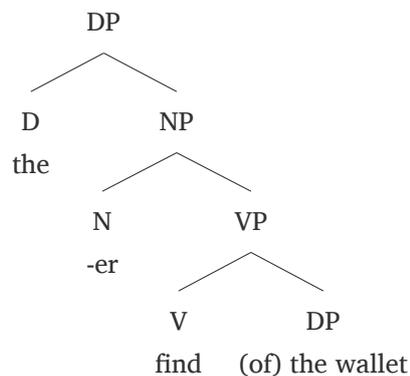
1 Introduction

It has been argued that English agent nominalizations with the morpheme *-er*, as in (1), are deprived in syntactic structure (Baker & Vinokurova 2009; Alexiadou & Schäfer 2010). In (1), a tense marker cannot be realized:

- (1) a. the dancer
b. *the danced-er

The morpheme *-er* in English is taken to be the head N that selects a bare VP without an external argument (EA) (Baker & Vinokurova 2009). Baker & Vinokurova's take on the derivation for (2a) is provided in (2b).¹

- (2) a. the finder of the wallet
b. The derivation for *the finder of the wallet* (Baker & Vinokurova 2009: 520)²



Baker & Vinokurova (2009) argue that there is a type of individual-denoting nominalizations in Gĩkũyũ that is syntactically more articulated in size than agent nominalizations. In addition to transitive and unergative predicates, non-agentive unaccusative predicates are allowed in this type of nominalizations. Examples in (3) are referred to as *subject* nominalizations, according to Baker & Vinokurova.

- (3) a. mu-**ku**-i
1-die-I
'one who dies (dier)'
b. mu-**twek**-i
1-melt-I
'one who melts' (Gĩkũyũ, Baker & Vinokurova 2009: 547)

¹ It has been argued, however, that agent nominalizations can host EAs in languages such as Spanish, Malagasy, French, Romanian, and Wáŕšiw (Fábregas 2012; Ntelitheos 2012; Roy & Soare 2014; 2020; Hanink 2021).

² We assume that the suffix *-er* in (2b) attaches to the verb via head movement or affix hopping/lowering as suggested by an anonymous reviewer.

For clarity, **Figure 1** illustrates the relation between agent nominalizations and subject nominalizations. Agent nominalizations belong to subject nominalizations. Agent nominalizations denote agentive entities (e.g., *a dance-er*), while subject nominalizations denote either agentive or non-agentive entities (e.g., *a dance-er* or *a die-er (one who dies)*). Hence, the former is a proper subset of the latter.

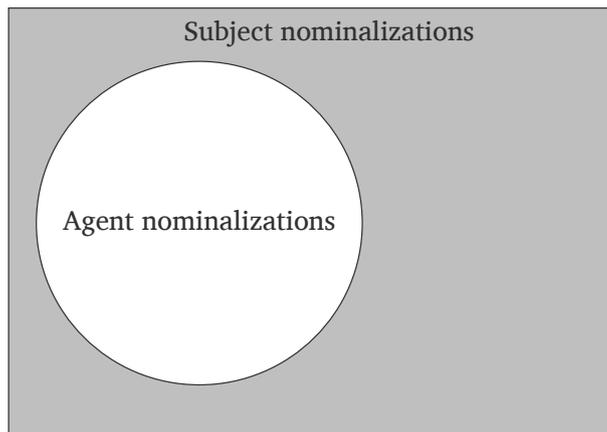


Figure 1: The relation between agent and subject nominalizations.

Quite notably, a reflexive anaphor can participate in Gĩkũyũ subject nominalizations, as shown in (4), which is from Baker & Vinokurova (2009: 548) (see also Mugane 1997).

- (4) Andũ ma-ti-thũ-ire mũ-ĩ-end-i ta mũ-ĩ-yamb-i.
 people 3PL.S-NEG-hate-PERF 1-REFL-like-I like 1-REFL-pride-I
 ‘People don’t hate one who likes him/herself as much as one who is full of him/herself.’

Baker & Vinokurova claim that the EA, PRO, is introduced in the derivation as the antecedent that syntactically binds the reflexive anaphor *ĩ*. PRO is represented in the tree schematized in (6).

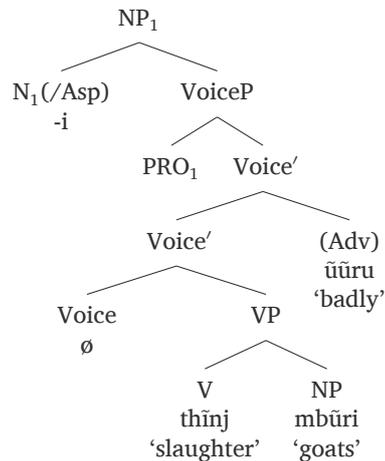
Gĩkũyũ subject nominalizations additionally allow low adverbs, such as *ũũru* ‘badly,’ as shown in (5) from Baker & Vinokurova (2009: 547) (see also Mugane 1997). This suggests that there are similarities between the clausal domain and the nominal domain in terms of adverbial modification.

- (5) A-thĩnj-í mbũri ũũru acio nĩ-má-á-tum-a tũ-caamb-e.
 2-slaughter-I goats badly DEM FP-3PL.S-PERF-make-A lPL.S-bad.rep-SBJ
 ‘Those (people) who slaughter goats badly have given us a bad reputation.’

Baker & Vinokurova’s analysis of the subject nominalization in (5) is fleshed out in (6). Under their view, the suffix *-i* is the nominalizer that caps off VoiceP in subject nominalizations.

In (6), the syntactic projection c-selected by the ‘aspectual (Asp)’ nominalizer cannot be bigger than VoiceP.³ PRO is the subject, and it is co-referential with the nominalizer *-i* and the entire NP.

(6) Subject nominalization in (5) (Baker & Vinokurova 2009: 548)



Based on their survey of 78 languages, Baker & Vinokurova suspect that subject nominalizations are rare. They also do not report evidence for clausal properties (e.g., tense) inside subject nominalizations. We show that Oshiwambo showcases subject nominalizations that can be associated with a past tense reading, indicating that the size of the nominal is as big as TP. An implication of this work is that subject nominalizations can be more clause-like than previously assumed in the literature. We also argue that an extended version of the phrasal layering analysis (Alexiadou & Schäfer 2010) captures the facts about Oshiwambo subject nominalizations. Alternative analyses, including the complex head analysis of nominalizations (Wood 2023), do not seem to be applicable here.

The organization of this work is as follows: Section 2 lays out the basic facts about Oshiwambo. Section 3 shows that various types of argument structure and tense can be realized inside subject nominalizations. Section 4 fleshes out the analysis. Section 5 demonstrates that subject nominalizations are different from reduced and headless relative clauses in Oshiwambo. Section 6 concludes.

2 Basic facts

Oshiwambo is a southern Bantu language of the Niger-Congo family spoken in the northern part of Namibia and the southern part of Angola. The canonical word order is SVO. Similar to other Bantu languages, Oshiwambo displays a number of noun class prefixes. Noun classes 1 and 2 are often used with human-denoting nouns. Noun class 1 is used with singular-denoting entities, and

³ Tense and negation are not permitted inside Giküyü agent/subject nominalizations (see Mugane 1997).

noun class 2 with plural-denoting entities. In addition to noun class prefixes, an augment (AUG) prefix is introduced in Oshiwambo noun phrases. We adopt the view that the augment in Bantu is a determiner (D of DP) (see De Dreu 2008; Visser 2008; Carstens & Mletshe 2016; Gambarage 2019, among others). Of the various dialects in Oshiwambo, we focus on Oshingandjera. Oshingandjera is spoken by approximately 42,000 people as their first language. The majority of Oshingandjera speakers live in the Ongandjera district in the northern part of Namibia. The examples presented in this work are confirmed by one of the authors of this paper, who is a native speaker of Oshingandjera. The grammaticality of the examples is additionally confirmed by three other native speakers of the dialect.

(7) shows how simple nouns are realized in Oshiwambo. The noun class 1 prefix, *mu-*, denotes singular entities, as shown in (7a). The noun class 2 prefix, *a-*, denotes plural entities, as shown in (7b). The AUG prefix undergoes allomorphy depending on the number of the nominal entity. In cases where the entity is singular-denoting as in (7a), AUG is spelled out as *o-*. In cases where the entity is plural-denoting as in (7b), AUG is spelled out as *a-*.

- (7) a. **o-mu-nhu**
 AUG-1-person
 ‘a person’
 b. **a-a-nhu**
 AUG-2-person
 ‘people’

In many cases, agentive nominals host noun classes 1 and 2 since these noun phrases are often human-denoting. Agentive nominals are also realized with the suffix *-i*. In (8), the suffix *-i* is realized together with the augment and the noun class prefix. ‘AUG-1-V-*i*’ and ‘AUG-2-V-*i*’ are productively used for Oshiwambo agent nominalizations.

- (8) a. **o-mu-nhuk-i**
 AUG-1-jump-*i*
 ‘a jumper’
 b. **a-ba-nhuk-i**
 AUG-2-jump-*i*
 ‘jumpers’

The pattern observed in (8) extends to subject nominalizations. In Section 3, we will see that the suffix *-a*, in addition to *-i*, can be realized in this type of nominalizations. An anonymous reviewer asks whether other suffixal forms are attested in Oshiwambo nominalizations. While this paper primarily focuses on how the *-i~a* alternation relates to tense in individual-denoting nominalizations, we note that event-denoting nominalizations can host other suffixal forms.

Event-denoting nominalizations can be expressed using the suffix *-o*, for instance, as shown in (9). Contrast this with the individual-denoting nominalization in (10).

- (9) \emptyset -e-shanagul-**o** shi-lando
 AUG-5-destroy-**o** 7-city
 ‘the destruction of the city’ (event-denoting nominalization)
- (10) o-mu-shanagul-**i** shi-lando
 AUG-1-destroy-**i** 7-city
 ‘the destroyer of the city’ (individual-denoting nominalization)

(10) is the kind of nominalization we will attend to in this paper.

3 Subject nominalizations

Subject nominalizations in Oshiwambo are realized with a noun class prefix and the suffix *-i* or *-a*, as will be discussed in Section 3.4. In fact, this is attested in many Bantu languages (see Mugane 1997; Krüger & Pretorius 2006; Mletshe 2010; Lee 2024). Oshiwambo subject nominalizations can host a wide range of predicates, including unaccusative and passive predicates. Reflexive, reciprocal, applicative, and causative markers can also be showcased inside Oshiwambo subject nominalizations. Quite importantly, tense can be realized in subject nominalizations as well. This suggests that Oshiwambo subject nominalizations can host the following syntactic phrases:

- (11) a. TP
 b. VoiceP
 c. Appl(icative)P
 d. VP

In what follows, we provide empirical evidence supporting the presence of these phrases inside subject nominalizations.

3.1 Unaccusatives & passives

Oshiwambo allows unaccusative and passive predicates inside subject nominalizations (see also Hanink 2021 on Wášiw subject nominalizations and Gotah & Lee 2024 on Ewe subject nominalizations).

The sentences in (12) contain the unaccusative predicates *gw* ‘to fall’ and *s* ‘to die.’

- (12) a. Penda o-kwa-**gw**-a.
 Penda AFF-3SG.PST-fall-A
 ‘Penda fell.’

- b. Penda o-kwa-s-a.
 Penda AFF-3SG.PST-die-A
 ‘Penda died.’

In (13), the verbs *gw* ‘to fall’ and *s* ‘to die’ are realized together with the suffix *-i*, denoting subject nominalizations. The verbs are also realized together with an augment and a noun class, as is usually the case with Oshiwambo noun phrases (see Section 2).

- (13) a. o-mu-gw-i
 AUG-1-fall-I
 ‘one who falls (a faller)’
 b. o-mu-s-i
 AUG-1-die-I
 ‘one who dies’

When a transitive predicate undergoes passivization, the passive suffix *-w* is realized.⁴ (14), hosting the predicate *dhipag* ‘to kill,’ demonstrates this point. (14a) is an active sentence, and (14b) is its passive counterpart. The *by*-phrase is optionally realized in (14b).

- (14) a. Penda o-kwa-dhipag-a Elago.
 Penda AFF-3SG.PST-kill-A Elago
 ‘Penda killed Elago.’
 b. Elago o-kwa-dhipag-w-a (ku-Penda)
 Elago AFF-3SG.PST-kill-PASS-A by-Penda
 ‘Elago was killed (by Penda).’

The passive suffix *-w* can surface together with the predicate *dhipag* ‘to kill’ inside subject nominalizations. The passivization of (15a) leads to (15b). As expected, the *by*-phrase in (15b) is optional, which aligns with our observation in (14b).

- (15) a. o-mu-dhipag-i
 AUG-1-kill-I
 ‘a killer’
 b. o-mu-dhipag-w-i (ku-Penda)
 AUG-1-kill-PASS-I by-Penda
 ‘one who is killed (by Penda)’

⁴ In (13a), *w* in *gw* ‘to fall’ is not associated with the passive marker. Instead, it is a result of hiatus resolution. Underlyingly, the form is *gui*. Because hiatus is not allowed in the language, *ui* turns into a glide. The glide is realized as *w*.

Based on the empirical facts covered so far, we see that Oshiwambo subject nominalizations accommodate unaccusative and passive predicates (e.g., *gw* ‘to fall’ and *dhipag-w* ‘to be killed’), in addition to unergative and transitive predicates (e.g., *nhuk* ‘to jump’ and *dhipag* ‘to kill’). Overall, we argue that different types of argument structure can be established inside Oshiwambo subject nominalizations.

3.2 Causatives & applicatives

The introduction of arguments such as causers and beneficiaries is signaled by causative and applicative markers in Bantu languages. Oshiwambo is not an exception. The language showcases these properties:

- (16) a. Penda o-kwa-nhuki-**th**-a Elago.
 Penda AFF-3SG.PST-jump-CAUS-A Elago
 ‘Penda made Elago jump.’
 b. Penda o-kwa-telek-**el**-a Elago \emptyset -o-shi.
 Penda AFF-3SG.PST-cook-APPL-A Elago AUG-9-fish
 ‘Penda cooked fish for Elago.’

Causative and applicative markers can be realized in subject nominalizations, as shown in (17).⁵ Here, subject nominalizations exhibit clausal properties with respect to the functional morphemes and the nominal arguments that they host.

- (17) a. o-mu-nhuki-**th**-i Elago
 AUG-1-jump-CAUS-I Elago
 ‘one who makes Elago jump’
 b. o-mu-telek-**el**-i Elago o-shi
 AUG-1-cook-APPL-I Elago 9-fish
 ‘one who cooks fish for Elago’

Causative and applicative markers can surface together with the passive marker *-w*, as in (18). This suggests that more similarities are observed between the nominal domain and the clausal domain in Oshiwambo compared to those reported in non-Bantu languages (Baker & Vinokurova 2009; Alexiadou & Schäfer 2010; Hanink 2021; Wood 2023).

- (18) a. o-mu-nhuki-**th-w**-i (ku-Penda)
 AUG-1-jump-CAUS-PASS-I by-Penda
 ‘one who is made to jump (by Penda)’

⁵ Gikūyū subject nominalizations can also host causative and applicative markers (see Mugane 1997).

- b. o-mu-telek-el-w-i (ku-Penda)
 AUG-1-cook-APPL-PASS-I by-Penda
 ‘one who is cooked for (by Penda)’

So far, we have seen that causative, applicative, and passive markers are allowed in subject nominalizations. In Section 3.3, we will see that subject nominalizations can accommodate reciprocal and reflexive markers.

3.3 Reflexives & reciprocals

Reflexive and reciprocal markers can be realized in Oshiwambo sentences. In (19), for instance, the reflexive marker *i* refers to the subject *Penda*.

- (19) Penda o-kwi-i-dheng-a.
 Penda AFF-3SG.PST-REFL-hit-A
 ‘Penda hit himself.’

Anaphor binding is done locally in Oshiwambo. (20) demonstrates this point. When the antecedent and the reflexive anaphor are placed in the same clause, the sentence is felicitous. When the two are not placed in the same clause, the sentence is infelicitous:

- (20) Penda₁ o-ta-dhilaadhil-a [kutya Halo₂ o-kwi-i_{*1/2}-dheng-a].
 Penda AFF-IPFV.3SG-think-A COMP Halo AFF-3SG.PST-REFL-hit-A
 ‘Penda₁ thinks that Halo₂ hit himself_{*1/2}.’

We argue that reflexive anaphor binding in Oshiwambo is achieved syntactically. Semantic and lexical alternatives are ruled out. Evidence comes from the availability of the *statue*-reading or the *near-reflexive* (proxy) reading. Similar to English reflexive anaphors (e.g., *himself* and *herself*), Oshiwambo reflexive morpheme *i* allows the *statue*-reading, as shown in (21) and (22).

- (21) John hit himself. ([i] John₁ hit John₁ or [ii] John₁ hit a statue of John₁)

- (22) Penda o-kwi-i-dheng-a.
 Penda AFF-3SG.PST-REFL-hit-A
 ‘Penda hit himself.’ ([i] Penda₁ hit Penda₁ or [ii] Penda₁ hit a statue of Penda₁)

Under a semantic/lexical approach to reflexive anaphor binding, the presence of the *statue*-reading in (21) and (22) cannot be readily accounted for. This is mainly because the semantic/lexical identity of the anaphor is not the same as the identity of the antecedent. This is less of an issue under the usual syntactic approach to binding since the semantics of

the antecedent and the anaphor need not be identical.⁶ Hence, the *statue*-reading reading is accounted for if we assume that anaphor binding is achieved syntactically. In order to satisfy Condition A, argument structure needs to be established where an antecedent c-commands its anaphor in a local environment. In the case of (22), *Penda* is the EA that binds its reflexive anaphor.

The reflexive marker *i* can be realized inside Oshiwambo subject nominalizations. Quite notably, the *statue*-reading is available here:

- (23) o-mwi-i-dheng-i
 AUG-1-REFL-hit-I
 ‘one who hits himself/herself’ or ‘one who hits a statue of himself/herself’

(23) suggests that a syntactic antecedent is present in the derivation. We argue that PRO is introduced as the EA that locally binds the anaphor. Note that this is well in line with Baker & Vinokurova’s claim that PRO is introduced in Gĩkũyũ subject nominalizations, as shown in (6).

The Oshiwambo reciprocal marker *than* refers to a plural antecedent. In (24), *than* refers to the subject, *Penda* and *Ndapewa*.

- (24) Penda na Ndapewa o-ya-hokana-**than**-a.
 Penda and Ndapewa AFF-3PL.PST-marry-RECP-A
 ‘Penda and Ndapewa married each other.’

As expected, reciprocal anaphor binding is done locally in Oshiwambo. (25a) is felicitous because the plural antecedent and the reciprocal are in the same clause. (25b), on the other hand, is infelicitous because the two are not in the same clause.

- (25) a. Halo o-ta-dhilaadhil-a [kutya **a-a-nhu** o-ya-dheng-**than**-a]
 Halo AFF-IPFV.3SG-think-A COMP AUG-2-person AFF-3PL.PST-hit-RECP-A
 ‘Halo thinks that people hit each other.’
 b. ***A-a-nhu** o-ta-dhilaadhil-a [kutya Halo o-ya-dheng-**than**-a]
 People AFF-IPFV.3PL-think-A COMP AUG-2-person AFF-3SG.PST-hit-RECP-A
 Intended: ‘People think that Halo hit each other.’

The realization of the reciprocal marker *than* is possible inside subject nominalizations. Noun class 2 instead of noun class 1 has to be used in (26) because the reciprocal marker refers to a plural entity instead of a singular entity.

⁶ Also note that the theta-roles assigned to the antecedent and the anaphor are not the same.

- (26) a. a-a-hokanna-**than-i**
 AUG-2-marry-RECP-I
 ‘those who marry each other (spouses)’
 b. *o-mu-hokanna-**than-i**
 AUG-1-marry-RECP-I
 Intended: ‘those who marry each other (spouses)’

Based on the empirical facts so far, we have established that CARP is attested in subject nominalizations. The causative and applicative examples suggest that applied arguments can participate in subject nominalizations. The object reflexive and reciprocal markers inside subject nominalizations suggest that an EA is introduced in the derivation. The take-home message here is that Oshiwambo subject nominalizations are quite articulated in verbal/clausal size. This will become more evident when tense is taken into consideration.

3.4 Tense

Oshiwambo subject nominalizations associated with passivization can denote a past tense reading. In (27a), the temporal adverb *hela* ‘yesterday’ modifies the content internal to its subject nominalization. Note that a different temporal adverb, namely *nená* ‘today,’ modifies the entire sentence, suggesting that subject nominalizations can independently bear tense. Also, note that this is only possible when the suffix *-a* is realized inside the derived nominal. Hence, a past tense reading is not possible with the *-i*-suffixed subject nominalization, as demonstrated in (27b).

- (27) a. O-mu-dheng-w-**a** gwo-**hela** (ku-Penda) o-ta-alukwa **nená**.
 AUG-1-hit-PASS-A ASSOC-yesterday by-Penda AFF-IMPERF-sick today
 ‘One who was hit (by Penda) yesterday is sick today.’
 b. O-mu-dheng-w-**i** (*gwo-**hela**) (ku-Penda) o-ta-alukwa **nená**.
 AUG-1-hit-PASS-I ASSOC-yesterday by-Penda AFF-IMPERF-sick today
 ‘One who is hit (by Penda) is sick today.’

Tense-associated subject nominalizations are observed even when the passive suffix is realized with causative and applicative markers:

- (28) a. o-mu-nhuki-**th-w-a** gwo-**hela** (ku-Penda)
 AUG-1-jump-CAUS-PASS-A ASSOC-yesterday by-Penda
 ‘one who was made to jump (by Penda) yesterday’
 b. o-mu-telek-**el-w-a** gwo-**hela** (ku-Penda)
 AUG-1-cook-APPL-PASS-A ASSOC-yesterday by-Penda
 ‘one who was cooked for (by Penda) yesterday’

A remote past tense-associated perfect marker (R.PFV) can be realized in subject nominalizations, which is expected under our current analysis:

- (29) o-mu-dheng-**e**lel-w-a ku-Mary
 AUG-1-hit-R.PFV-PASS-A by-Mary
 ‘one who had been hit by Mary’

Note that only a past tense reading is available for the *-a*-suffixed subject nominalizations. A future tense reading, for instance, is ruled out. We know that this is the case since future tense temporal adverbs such as ‘tomorrow’ are ruled out inside *-a*-suffixed subject nominalizations:

- (30) a. *o-mu-dheng-w-a gwa-**ng**ula
 AUG-1-hit-PASS-A ASSOC-tomorrow
 Intended: ‘one who will be hit tomorrow’
 b. *o-mu-long-w-a gwa-**ng**ula
 AUG-1-teach-PASS-A ASSOC-tomorrow
 Intended: ‘one who will be taught tomorrow’

The empirical picture for Oshiwambo cannot be readily reconciled with the structure presented in (6). The reduced syntactic size of (6) provides no room for temporal adverbs to be introduced in the derivation. Based on the evidence from Oshiwambo, we argue that subject nominalizations can be more articulated in syntactic size than what has been assumed in the literature.⁷

In addition to temporal adverbs, we note in passing that low adverbs, such as *nayi* ‘badly,’ can be realized inside Oshiwambo subject nominalizations. (31) patterns together with the Gikūyū data in (5).

- (31) a-a-dhipag-i i-kombo **nayi**
 AUG-2-kill-I 8-goat badly
 ‘those who slaughter goats badly’

Before concluding this section, we highlight that the past tense-associated reading in *-a*-suffixed subject nominalizations is possible only when the passive suffix is realized in the derivation:

- (32) a. o-mu-dheng-w-a gwo-**h**ela
 AUG-1-hit-PASS-A ASSOC-yesterday
 ‘one who was hit yesterday’

⁷ Oshiwambo seems to exhibit a rather unusual pattern where a noun class and a past tense reading are both showcased inside subject nominalizations. This is evidence that TPs can participate in nP nominalizations discussed in Alexiadou (2020), which is quite unexpected. Future work remains to be done on whether this phenomenon is attested in other languages.

- b. *o-mu-dheng-a gwo-**hela**
 AUG-1-hit-A ASSOC-yesterday
 Intended: ‘one who hit (someone/something) yesterday’

We posit a type of T that specifically selects for a passive VoiceP. In order to gain further evidence for this type of head, examining other (Bantu) languages seems desirable. While the complete picture is not yet available, which is a limitation of our study, we provide our initial analysis of the Oshiwambo facts in the following section.

4 An analysis

We adopt Alexiadou & Schäfer’s (2010) phrasal layering analysis to account for the data in Oshiwambo. The tree structures schematized in (34) provide our analysis of how subject nominalizations in (27) are derived. V-to-T movement derives *dheng-w-a* in (27a) and *dheng-w-i* in (27b) based on Baker’s (1985) Mirror Principle.⁸ Based on the idea that nominalizers trigger nominal concord (see Fuchs & van der Wal 2022 for Bantu nominal concord, among others), we assume that noun class prefixes behave like nominalizers in Oshiwambo. In (33), we see that the noun class prefix triggers nominal concord even in the absence of the suffix *-i* or *-a*.

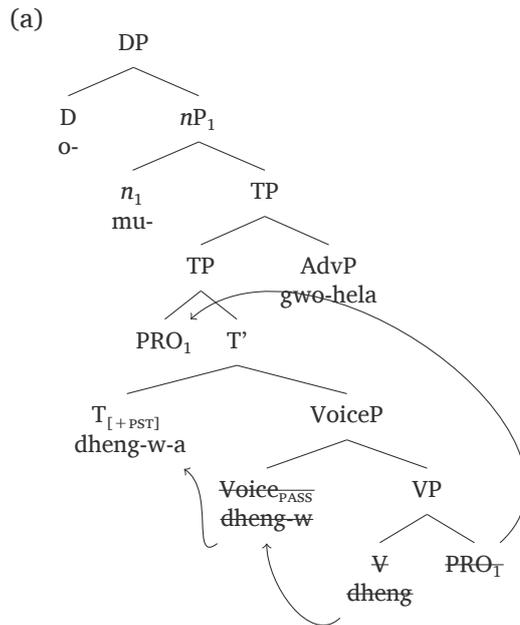
- (33) a. a-a-nhu **ya**-tatu a-a-le
 AUG-2-person 2-three AUG-2-tall
 ‘three tall people’
 b. a-a-tum-w{-i/-a} **ya**-tatu a-a-le
 AUG-2-send-PASS-I/-A 2-three AUG-2-tall
 ‘three tall ones who are/were sent’

Moreover, noun classes 1 and 2 give rise to singular- and plural-denoting nouns. This implies that noun classes 1 and 2 serve the role of individualizing nouns, making the nouns countable. Note that individuation is a unique property of nouns that can be achieved even in the absence of the suffixes *-i* and *-a*, as shown in (7) and (33a). For this reason, we posit that noun classes 1 and 2 are *n* (nominalizer) of *nP*, as shown in (34). We have yet to be convinced whether the suffixes *-i* and *-a* should also be treated as *n*. If the noun classes and the suffixes are both treated as a nominalizer, it is possible that Oshiwambo subject nominalizations involve a stacked-*nP* structure (see Kramer 2015; Lee & Lee 2019; Fuchs & van der Wal 2022; Wood 2023). For now, we posit that *-i* and *-a* are spelled out in T since the alternation between the two suffixes is determined by T’s past vs. non-past status in Oshiwambo.

⁸ As previously mentioned, we leave open the possibility that affix hopping/lowering may be involved in the derivation following an anonymous reviewer’s suggestion.

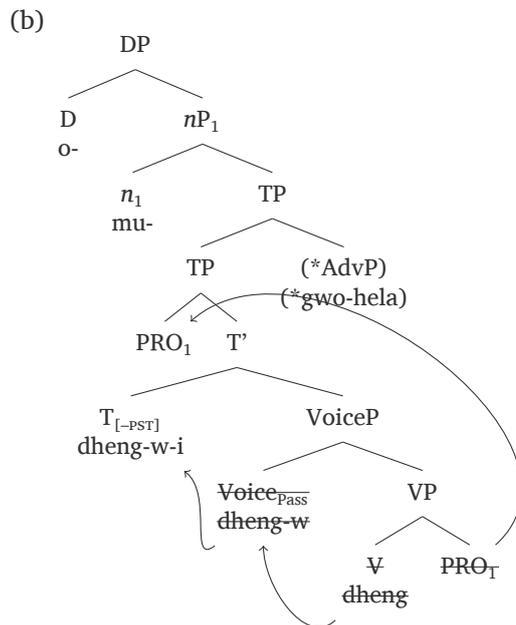
In (34), we assume that PRO is the subject argument, which moves to Spec,TP due to passivization.⁹ The idea that PRO is present in the derivation accords with Baker & Vinokurova's (2009) take on Gĩkũyũ subject nominalizations. An anonymous reviewer asks whether an overt nominal argument can replace PRO in (34). This is not possible. We assume that an overt nominal argument needs to be licensed in syntax. Chomsky (2008) proposes that phase heads such as C are the locus of all probing features. Under this view, the probing features on T, if there are any, must be supplied from C. Adapting Chomsky's (2008) feature inheritance, we assume that Ts initially lack features necessary for licensing nominal arguments. Case could be one of them. Since C is absent in subject nominalizations, the probing features cannot be supplied to T. We argue that this is why the subject inside subject nominalizations cannot be realized as an overt nominal argument.¹⁰ This also explains why subject-verb agreement is absent in subject nominalizations. Contrast (12) and (13), for instance. Based on this analysis, we predict that CP-less structures, such as gerunds and infinitival clauses, do not exhibit subject-verb agreement in Oshiwambo. We confirm that this is indeed the case.

(34) The derivations for the subject nominalization in (27a) and (27b), respectively



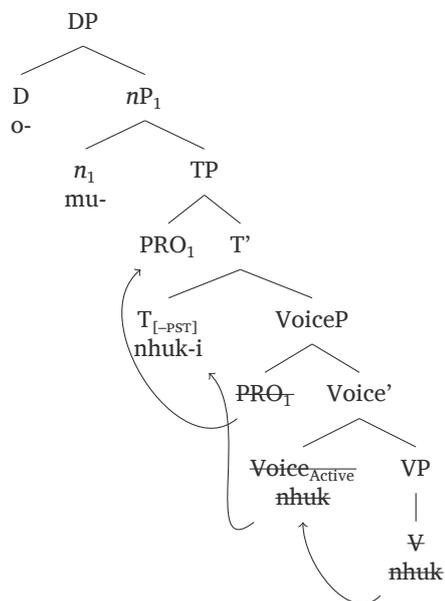
⁹ We posit Asp(ect)P inside Oshiwambo subject nominalizations, especially when examples such as (29) are taken into consideration. We omit AspP in our trees simply because Asp is not overtly realized in their corresponding examples.

¹⁰ To put it in another way, T is defective in the absence of C and thus it does not have the ability to license an overt nominal argument. Case may be parameterized according to Diercks (2012). Hence, we are open to the idea that nominal licensing can be done in some other fashion in Bantu.



(35) schematizes the derivation for (8a), which hosts an active (agentive) verbal structure:

(35) The derivation for the subject nominalization in (8a)



As mentioned in Section 3.4, we posit that past tense T selects a passive VoiceP under subject nominalizations. Non-past tense T, on the other hand, is more flexible in terms of what it can select. In any case, we assume that T inside Oshiwambo subject nominalizations is defective in that it only makes a past vs. non-past distinction. The notion of defective T has been posited for Turkish nominalizations (Kornfilt & Whitman 2011). Kornfilt & Whitman (2011) make a future vs.

non-future distinction for Turkish defective Ts. These Ts are defective in that the tense distinction is binary. There is no specified form for past tense, for instance. Kornfilt & Whitman (2011) also point out that the lack of agreement signals the defectiveness of T. As briefly mentioned above, subject-verb agreement is never observed in Oshiwambo subject nominalizations. Once again, feature inheritance becomes relevant in this context. In the absence of C, T cannot be supplied with the necessary features from C to induce agreement. Unlike full-fledged clauses, subject nominalizations do not host C and therefore do not exhibit subject-verb agreement.

Based on our discussion so far, the analysis put forward by Baker & Vinokurova (2009) does not straightforwardly carry over to Oshiwambo. Evidenced by the fact that Oshiwambo subject nominalizations embed tense, subject nominalizations can be more extensive in size than (6). Wood (2023) convincingly argues that a deprived verbal structure that lacks phrasal projections such as VoiceP is associated with Icelandic agent nominalizations. In Oshiwambo subject nominalizations, the presence of the reflexive marker, applied arguments, *by*-phrases, low adverbs, and temporal adverbs calls for a more articulated structure that includes VoiceP and TP. Overall, the facts in Oshiwambo can be captured under an extended version of Alexiadou & Schäfer's (2010) phrasal layering analysis where verbal functional projections, including TP, can be established inside the nominal domain.¹¹

5 Reduced & headless relative clauses

Subject nominalizations are different from relative clauses (RCs). RCs in Oshiwambo are postnominal, and the relativizer is overtly expressed, as shown in (36). Note that none of the previous examples showcasing Oshiwambo subject nominalizations contain a relativizer.

- (36) o-mu-nhu [ngu a-nhuk-a]
 AUG-1-person REL 3SG-jump-A
 'a person who jumped'

Subject nominalizations are not reduced RCs. Reduced RCs do not require a relativizer. Oshiwambo reduced RCs (if there is one) require an overt DP as their head noun, as shown in (37). This is not the case for subject nominalizations, as we have seen in the previous sections.

- (37) o-mu-nhu [ta-li o-shi-kuki]
 AUG-1-person PROG-eat AUG-7-cake
 'a person (who is) eating the cake'

¹¹ An anonymous reviewer asks whether negation is possible inside Oshiwambo subject nominalizations. Quite interestingly, they do not host negation. While this suggests that subject nominalizations do not display all of the properties in the clausal syntax, we wish to highlight that many of the clausal properties, including CARP, carry over to the nominal domain. In fact, Gotah & Lee (2024) show that negation is possible inside Ewe (Kwa) subject nominalizations. While future research remains to be done on this issue, there seems to be a cross-linguistic variation concerning the size of subject nominalizations.

	Subject nominalizations	Reduced RCs	Headless RCs
Overt relativizer	✗	✗	✓
Overt subject DP	✗	✓	✗
Augmented object DP	✗	✓	✓

Table 1: Subject nominalizations, reduced RCs, and headless RCs in Oshiwambo.

Also, note that an object inside reduced RCs can bear an augment, whereas an object inside subject nominalizations cannot. If subject nominalizations are taken to be reduced RCs, we would not expect this sort of discrepancy. The contrast between (31) and (37) demonstrates this point. It is not entirely clear why an object inside subject nominalizations does not bear an augment. While future work remains to be done on this issue, we emphasize that this is enough to disambiguate subject nominalizations from reduced RCs.

Subject nominalizations cannot be assimilated to headless RCs. Although the two nominals do not allow an overt DP as their head, they exhibit syntactic differences. (38) presents an example of a headless RC in Oshiwambo. Headless RCs require an overt relativizer, whereas subject nominalizations do not. Moreover, an object in a headless RC can bear an augment whereas an object in subject nominalizations cannot.

- (38) Penda o-ku-hole **ngu** a-mon-a **a-a-nano**.
Penda AFF-3SG-like REL 3.SG.PST-see-A AUG-2-child
‘Penda likes who saw the children.’

Table 1 summarizes the syntactic properties of subject nominalizations, reduced RCs, and headless RCs in Oshiwambo. Based on the empirical data provided thus far, we conclude that subject nominalizations cannot be treated on a par with reduced or headless RCs.

6 Conclusion

An implication of this work is that the syntactic size of subject nominalizations can be more articulated than previously assumed in the literature. Specifically, we have argued that TP can be showcased inside Oshiwambo subject nominalizations. This calls for a closer look at other (Bantu) languages to see if the findings from Oshiwambo can be replicated. Hopefully, this will shed further light on the typology of subject nominalizations. One aspect of Oshiwambo subject nominalizations that is worth investigating is the past tense reading that is only available with passivization. Future research remains to be done on why this should be the case.

Abbreviations

3 = third person, AFF = affirmative, APPL = applicative, ASSOC = associative, AUG = augment, CAUS = causative, IPFV = imperfective, PASS = passive, PL = plural, POSS = possessive, PROG = progressive, PST = past, RECP = reciprocal, REFL = reflexive, REL = relative, SG = singular

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Competing interests

The authors have no competing interests to declare.

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