The locality of allomorphy: Insights from Bidhaawyeet

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Abstract
This paper discusses a pattern of allomorphy with object-marking suffixes in the Cushitic language Bidhaawyeet (Beja). The various forms of the object suffix show a puzzling distribution. Inside relative clauses, their form is conditioned by the case and number features of the head of the relative clause. This apparent non-locality poses a problem for theories that impose a strict locality condition on allomorphic relations. Despite initial appearances, we argue that this relation is in fact local due to concord processes within the noun phrase. Further, we show that allomorphic conditioning fails in periphrastic constructions, thereby supporting the hypothesis that allomorpic conditioning is restricted to the morphosyntactic word or maximal X^0. We also extend our analysis to contexts in which allomorphic relations appears to be conditioned by clause type and argue that these too can be reduced to the same kind of local case and number allomorphy we find in relative clauses.

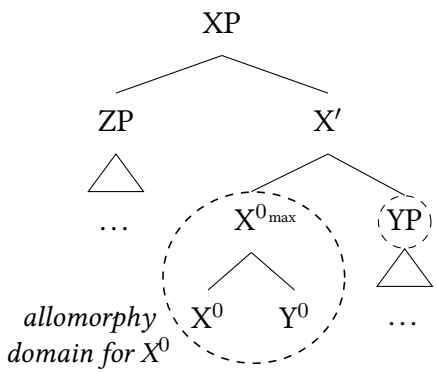
1 Introduction

Restrictions on allomorphy, the context-dependent appearance of 'special forms' of certain lexical items, has been the focus of much recent debate in the theoretical literature (see e.g. Embick 2010, Bobaljik 2012, Merchant 2015, Oseki 2016, Toosarvandani 2016, Moskal & Smith 2016, Bobaljik & Harley 2017, Božič 2019, Choi & Harley 2019, Smith et al. 2019, Ganenkov 2020, Dolatian 2023, Dolatian & Guekguezian 2023, Paparounas to appear). Chief among the questions that have been investigated is the role of locality—what are the structural conditions that must hold between a trigger and target in order for allomorphic conditioning to be possible? It has been frequently argued that triggers for allomorphy may also not be too distant from the target in a structural sense (e.g. Allen 1978, Siegel 1978, Bobaljik 2000, Adger et al. 2003, Bobaljik 2012, Choi & Harley 2019). A recent formulation of such a structural constraint on allomorphy has been proposed by Bobaljik & Harley (2017) (building on observations in Bobaljik 2012). The constraint in (1) states that both maximal and intermediate projections are barriers for allomorphic conditioning.

(1) *Locality Condition on Allomorphy* (Bobaljik & Harley 2017: 150)
β may condition α in (a), not (b):
a. $\alpha \ldots]_{X^0} \ldots \beta$
b. $^*\alpha \ldots]_{X^n} \ldots \beta$, where $n > 0$.

On this definition, the only possible elements that can trigger allomorphy of X^0 in the structure in (2) are other elements contained within the maximal complex head containing both elements ($X^{0^{max}}$) and the sister of $X^{0^{max}}$, YP (though importantly nothing contained within YP itself, as YP is a barrier for allomorphic conditioning given (1)).

(2)



This view of locality has the important consequence that, in order for two heads X and Y to stand in an allomorphic conditioning relation, they must be contained within the same complex head or *morphosyntactic word* (MWd).[1] In other words, complex head formation (e.g. via head movement) can create new allomorphic possibilities.

Arguably the most compelling evidence for this kind of locality condition comes from the observation that allomorphic conditioning is often lost in synthetic/periphrastic alternations (though see Dolatian 2023 for a potential counterexample). A particularly clear example of this comes from Bobaljik's (2012) cross-linguistic study of comparative constructions. In this work, Bobaljik (2012) showed that, for languages which possess both synthetic comparative (expressed as a suffix: *X-er*) and periphrastic comparative forms (e.g. *more X*), root suppletion of the adjective is only found in the synthetic comparative. Two of the languages that Bobaljik (2012) discusses are Greek and Georgian, with the relevant examples given in (3).

(3)

		positive	comparative	superlative	
a.	Greek	**kak**-ós	**cheiró**-ter-os	o **cheiró**-ter-os	'bad'
		kak-ós	pjo **kak**-ós	o pjo **kak**-ós	'bad'
b.	Georgian	**k'argi**-i	u-**mǰob**-es-i	sa-u-**mǰob**-es-o	'good'
		k'argi-i	upro **k'argi**-i	q'vela-ze (upro) **k'argi**-i	'good'

In Greek, for example, the adjective 'bad' has the stem form *kak* in the positive grade, yet takes the alternative stem *cheiró* in the synthetic comparative and the superlative, e.g. *(o) cheiró-ter-os* (crucially, Bobaljik argues that the comparative is contained in the superlative). In the periphrastic comparative, however, the comparative morpheme is a free morpheme *pjo* and no root suppletion is found.

As Bobaljik (2012) shows, we can assume that there are two rules determining the possible forms of the adjective 'bad' in Greek: A general realization of the root as *kak* (4b), as well as a context-specific allomorph *cheiró* that is inserted in the context of a comparative head (4a).

(4) a. $\sqrt{\text{bad}} \longrightarrow$ *cheiró* / ___ CMPR

b. $\sqrt{\text{bad}} \longrightarrow$ *kak*

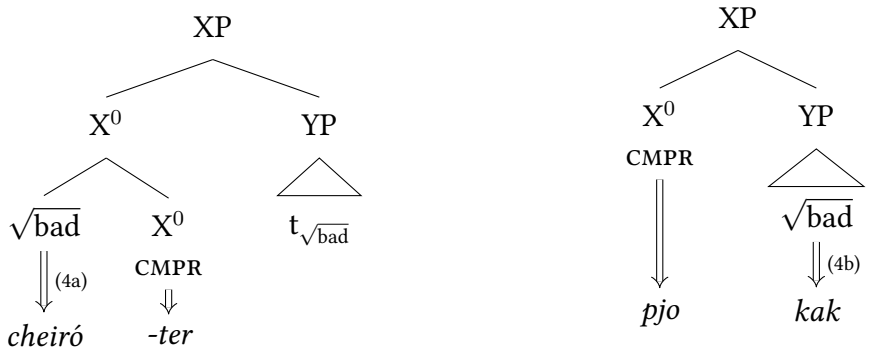
Adopting somewhat simplified structures here, the crucial difference is whether the root forms a complex head with the comparative morpheme or not (6). Given the locality condition in (1), the

[1] Embick & Noyer (2001: 574) define a morphosyntactic word as follows:

(i) At the input to Morphology, a node X^0 is (by definition) a *morphosyntactic word* (MWd) iff X^0 is the highest segment of an X^0 not contained in another X^0.

context specification of (4a) is only met if this feature is on a head that is 'visible' to the root.[2] In the periphrastic comparative where CMPR is realized as *pjo*, the comparative morpheme is structurally too far away from the root 'bad', given the locality condition in (1). In other words, a maximal projection boundary (YP) intervenes.

(5)



A similar pattern can be found with verb root suppletion in Korean. It has been well-documented in the literature that Korean has two main kinds of negative constructions (see e.g. Ahn 1991, Li 1994, Sells 1995, Chung 2007, Han & Lee 2007, Choi & Harley 2019). The first is the so-called 'short-form' negation where the negative marker *an(i)/mos* directly precedes the verb as in (6b) (note that the negator *mos* contributes an additional modal meaning). The second construction is the periphrastic 'long-form' negation, where negation instead attaches to the dummy verb *ha* and the main verb is suffixed with *-ci* (6c).

(6) a. eysute-ka **ca**-n-ta
Esther-NOM sleep-PRES-DECL
'Esther is sleeping.'

b. eysute-ka an(i)/mos **ca**-n-ta
Esther-NOM NEG sleep-PRES-DECL
'Esther isn't sleeping/is not allowed to sleep.'

c. eysute-ka **ca**-ci an(i)/mos ha-n-ta
Esther-NOM sleep-CI NEG do-PRES-DECL
'Esther isn't sleeping/is not allowed to sleep.' (Chung 2007: 97–98)

In addition to this, certain verbs in Korean show suppletion in the context of negation. One such example is 'exist' which has the stem form *iss* in positive sentences (7a). In short-form negation constructions, the verb root appears as *eps* and the negative morpheme is null (7b).[3] Crucially, however, the suppletive stem *eps* is not found in the long-form negation construction (7c). The same is found with the suppletive alternation with *al/mol* ('know') (Chung 2007: 119; Choi & Harley 2019: 1348).

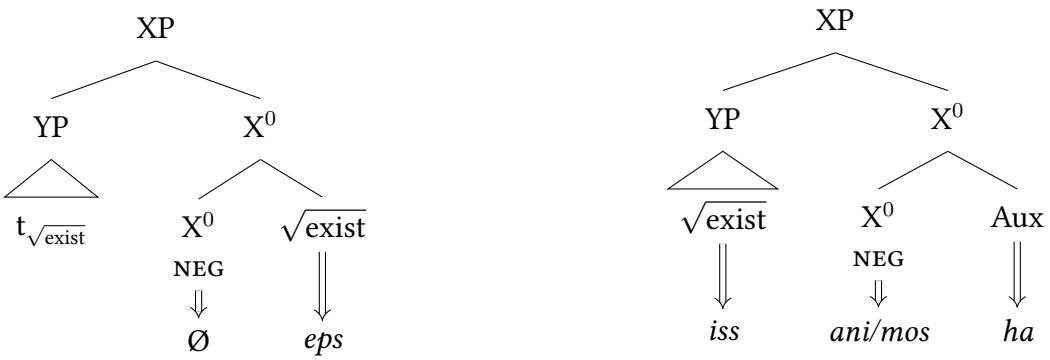
[2]Here, there is mutual conditioning between CMPR and the root that is subject to the same locality conditions. We can assume, as Bobaljik (2012: 69) does, that the abstract comparative morpheme CMPR is realized as *-ter* in the context of an adjectival root and as *pjo* in all other contexts.

[3]This is another case of mutual conditioning similar to what we find with CMPR in the comparative. While Greek shows two distinct overt forms of the comparative morpheme with suppletive/non-suppletive roots (*-ter* vs. *pjo*), some English comparatives can be argued to have a null comparative morpheme with suppletive stems, compare *good∼bett-er* vs. *bad∼worse-Ø* (see e.g. Bobaljik 2012: 34). Furthermore, it is important to note that Chung (2007, 2009) provides arguments from scope interactions that cases such as (6b) actually contain sentence-level negation (also see Choi & Harley 2019: 1343–1344 for additional evidence from idioms and ellipsis).

(7) a. thuroi mokma-nun **iss**-ess-ta
Troy wooden.horse-TOP exist-PAST-DECL
'The Trojan Horse existed.'
b. thuroi mokma-nun Ø **eps**-ess-ta
Troy wooden.horse-TOP NEG exist.NEG-PAST-DECL
'The Trojan Horse didn't exist.'
c. thuroi mokma-nun **iss**-ci an(i)/mos ha-yess-ta
Troy wooden.horse-TOP exist-CI NEG do-PAST-DECL
'The Trojan Horse didn't exist.' (Chung 2007: 121)

This analysis can receive a treatment along the same lines as the synthetic/periphrastic alternation with comparatives, as illustrated in (8). With synthetic short-form negation, the verb root moves into the same complex head as the negative morpheme and therefore into a syntactic configuration in which the root can be realized in its 'special form' *eps* (the same holds for the null negative morpheme). In the periphrastic short-form negation strategy, there is no incorporation of the verb root into the Neg head, which instead hosts a dummy verb *ha*. Here, the negative morpheme is not in the right structural configuration to condition allomorphy of the root, given the intervening YP boundary, and the root therefore appears in its general form *iss*.

(8)



While these two cases provide compelling evidence for allomorphic relations that are restricted to a complex head domain, Bobaljik & Harley (2017) note that this alone is not sufficient, as there are also cases in which a phrase itself appears to condition allomorphy on a head. A prominent example of this is verb suppletion for number triggered by one of its arguments. In Hiaki, the verb 'kill' has two allomorphs depending on the number of its object (9).

(9) a. Aapo uka koowi-ta **me'a**-k
3SG the.SG pig-ACC.SG kill.SG-PRF
'He killed the pig.'
b. Aapo ume koowi-m **sua**-k
3SG the.PL pig-PL kill.PL-PRF
'He killed the pig.' (Bobaljik & Harley 2017: 144)

As Bobaljik & Harley (2017) show, a similar pattern of suppletion is found with singular/plural subjects which they also analyze as underlying objects (even for unergatives; also see Harley et al. 2017). The definition of the locality condition in (1), stating that maximal and intermediate projections are boundaries for allomorphic conditioning, allows for licensing within a complex head $X^{0^{max}}$ and also by the sister of the complex head. Thus, the features of the DP object that is selected either by the root (Harley 2014) or the relevant categorizing head (Merchant 2019) will fall inside the licit domain for

allomorphic conditioning.

Bobaljik & Harley's definition excludes by design allomorphic conditioning by specifiers. This is in part due to the concern that cyclic head movement would facilitate conditioning by specifiers in higher position (Bobaljik & Harley 2017: 150–151). It is has been argued, however, that there are problematic cases of phrase-driven suppletion that are not compatible with this view (Toosarvandani 2016, Oseki 2016, Duncan 2019, Weisser 2019). Some prima facie problems for this approach would be examples of verb suppletion governed by the indirect object of a ditransitive verb, e.g. in Malayalam (Asher & Kumari 1997) (also see Comrie 2003 for an overview). Here, Bobaljik & Harley (2017: 154) suggest that the recipient may be merged as the sister of the verb in such languages.

There are examples for which this is far less plausible, however. Perhaps, the clearest case is conditioning by an applied argument in Northern Paiute. As Toosarvandani (2016) shows, there are two allomorphs for the verb 'talk', conditioned by a singular (10a) or plural subject (10b).

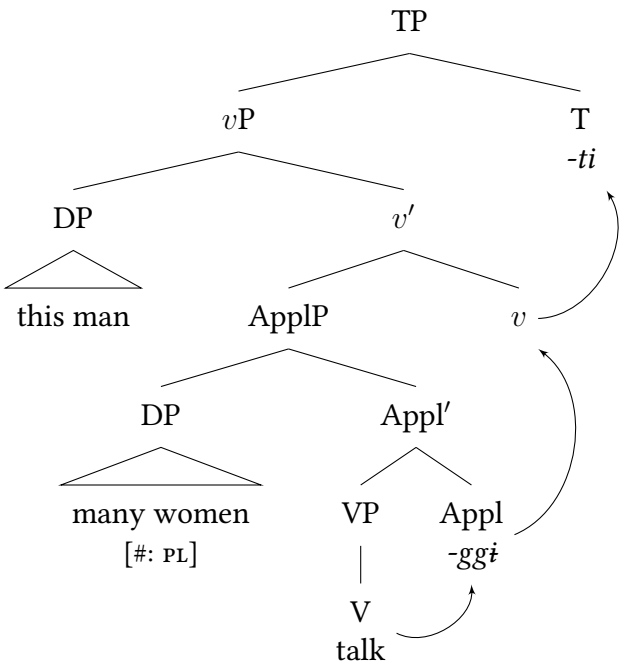
(10) a. Su=nana **yadu'a**
NOM=man talk.IPFV.SG
'The man is talking.'
b. Iwa-'yu naana **abbika**
many-NOM men talk.IPFV.PL
'Many men are talking.' (Toosarvandani 2016: 249)

The problematic example is given in (11), where the verb root shows suppletion for number that is conditioned by the plural feature of the benefactive argument 'many women'.

(11) Su=nana iwa-ggu momoko'ni **abbiga**-ggi-ti
NOM=man many-ACC women talk.PL-APPL-TNS
'This man is talking for many women.' (Toosarvandani 2016: 251)

The challenge posed by such examples for the locality condition in (1) becomes apparent in the structure in (12) that is assumed by Toosarvandani (2016) for (11), which adopts a standard 'high applicative' syntax (Pylkkänen 2008). Even if the locality condition in (1) were relaxed to just single out maximal projection boundaries as blockers of allomorphic conditioning (as in Bobaljik's 2012 original formulation), the DP 'many women' would be too far away structurally to condition allomorphy within the complex head residing either in T or V, depending on how complex head formation takes place (e.g. by head movement; e.g. Speas 1991, Harley 2011, or lowering; e.g. Bobaljik 1995, 2012).

(12)



This locality problem would be solved, however, if we were to assume that one of the heads in the complex verb form (e.g. v or Appl) agrees with the applied DP, thereby bringing the number features into the same complex head domain as the verb root and allowing for suppletion. This is essentially the solution proposed in Alexiadou (2014), Kim & Chung (2017) and Thornton (2019) for apparent violations of the condition in (1).[4] While this provides a technical solution to the problem of apparently too-distant triggers for allomorphy, it is often difficult to provide independent motivation for this line of analysis (see Bonet & Harbour 2012: 231–232 and Bobaljik & Harley 2017: 155–158 for associated concerns).

In this paper, we present a new pattern of apparent long-distance allomorphy in Bidhaawyeet that, we will argue, makes a strong case for such an analysis. The form of object suffixes on verbs inside relative clauses appears to be sensitive to the case and number features of the head noun of the relative clause. While this allomorphic conditioning appears extremely non-local at first, we argue that a process of concord within the noun phrase transfers the relevant features to the head of the relative CP, where they are locally available to the object suffix on the verb. While this allows us to maintain a stringent structural locality condition such as (1), it also receives some striking support from the fact that this apparent non-local conditioning is lost if the verb cannot move to C within the relative clause. This evidence for this comes from periphrastic constructions, which block external conditioning by the head noun of the relative clause.

In addition to accounting for this pattern of apparent non-local allomorphy, we argue that the view that these forms of allomorphs sensitive to case and number features allows us to provide a unified account of the full distribution of object suffix forms. In addition to object suffixes on verbs, these forms are used to mark possession within a noun phrase, something that we argue follows naturally from our account. Furthermore, these forms appear to be conditioned by clause type. Different kinds of adverbial clauses trigger the same forms we find in relative clauses. We illustrate how treating apparent matrix/non-matrix as instantiations of case-conditioned allomorphy can provide a unified account of

[4]This approach may also allow one to account for problematic cases of conditioning by transitive subjects (briefly mentioned by Bobaljik & Harley 2017: 154 as a potential challenge). Oseki (2016) discusses precisely such a case in Ainu. However, as pointed out by Weisser (2018), the choice of the inflectional ending on the verb must take into account both the features of the subject and the object (see Tamura 2000; Trommer & Bank 2017), meaning they will then also be locally available to the verb root in order to trigger suppletion.

not only object suffix forms, but also of allomorphy with negation and the copula whose distribution also appears to track clause type. A consequence of this is that all allomorphy in Bidhaawyeet that appears to track a matrix versus embedded distinction can be reduced solely to case.

The paper is organized as follows: The basic facts about verbal morphology and allomorphy of object suffixes are presented in section 2. Section 3 goes into further detail about our assumptions about how nominal concord works in the language and clarifies some relevant issues about the internal structure of relative clauses. In section 4, we then turn to our analysis of the central puzzle in the paper, apparent long-distance allomorphy in relative clauses, and show how it can be analyzed as local allomorphy. Supporting evidence for this comes from two periphrastic constructions, the future tense and the negative past. We extend our analysis of the object suffix forms in two other contexts, namely in noun phrases (in a possessive function) and in various subordinate clause types in sections 5 and 6. We argue that these contexts can also be captured as local allomorphy conditioned by case and number features. In section 6 we also apply our analysis to two other cases of apparent clause-type conditioned allomorphy (negation and copula forms). Section 7 then concludes.

2 Allomorphy in Bidhaawyeet

Bidhaawyeet (Beja[5]) is a Cushitic language principally spoken in the eastern Sudan, with smaller populations in southeastern Egypt near Marsa Alam and in the Gash-Barka and Anseba Zobas of Eritrea. While there are several grammatical descriptions of Bidhaawyeet (Munzinger 1864, Almkvist 1881, Reinisch 1893, Haig 1895, Roper 1928, Hudson 1964, 1976, Morin 1995, Appleyard 2007, Wedekind et al. 2007, 2008, Vanhove 2014, 2017), there are numerous aspects of its morphology and syntax that are in need of further documentation and analysis.[6] In this paper, we build on some of the existing observations in the literature. We will comment on where our interpretation and description differs significantly from existing works. The data we present come from the Port Sudan dialect of Bidhaawyeet, though we suspect that what our main claims hold for other dialects, too.

Let us begin by describing somee basic features of Bidhaawyeet. First, it is important to note that verbal morphology in Bidhaawyeet follows one of two inflectional patterns. For one class of verbs, such as 'go' in (13a), we have a suffixing pattern. For these verbs, tense and subject agreement are jointly expressed by a suffix on the verb. The other class of verbs follows a root-and-pattern system of inflection that is typical of Semitic languages. Here, the verb stem constitutes a sequence of consonants (or 'radicals') and tense/aspect is expressed by a template with the potential addition of further prefixes/suffixes (13b).

(13) a. *Baruuk taru ani giigani*
baruuk taru ani giig -ani
you.NOM or I go -PRES.1SG
'You or I (will) go.'

[5]The name 'Beja' is historically an exonym, borrowed by European languages from Arabic بجا *Bijā*. This name has been adopted in recent years as an ethnonym in Bidhaawyeet (*Bija*) as a result of ethnolinguistic nationalist activism, but language activists most frequently use the endonym for the language–indefinite *Bidhaawyeet* (/biɖaːwjeːt/) or definite *Tubdhaawi* (/tbɖaːwi/). As scholarly grammars of the language have used various names, we follow native speaker practice.

[6]Unless otherwise indicated, the examples in this paper come from Offer-Westort's notes from a year of fieldwork in Port Sudan and targeted elicitation from three native speakers: Abuzeinab Musa, Osman Daitak, and Mohamed Talib. In all examples, we first provide the example in standard Bidhaawyeet orthography and then a full segmented gloss. We occasionally simplify the glossing of non-concatenative verb forms when these details are not immediately relevant. Many non-concatenative verbal forms require short vowels that we take to be epenthetic and phonologically predictable; in these cases we omit these vowels from our glosses. In no case does this analysis have any bearing on the arguments of this paper.

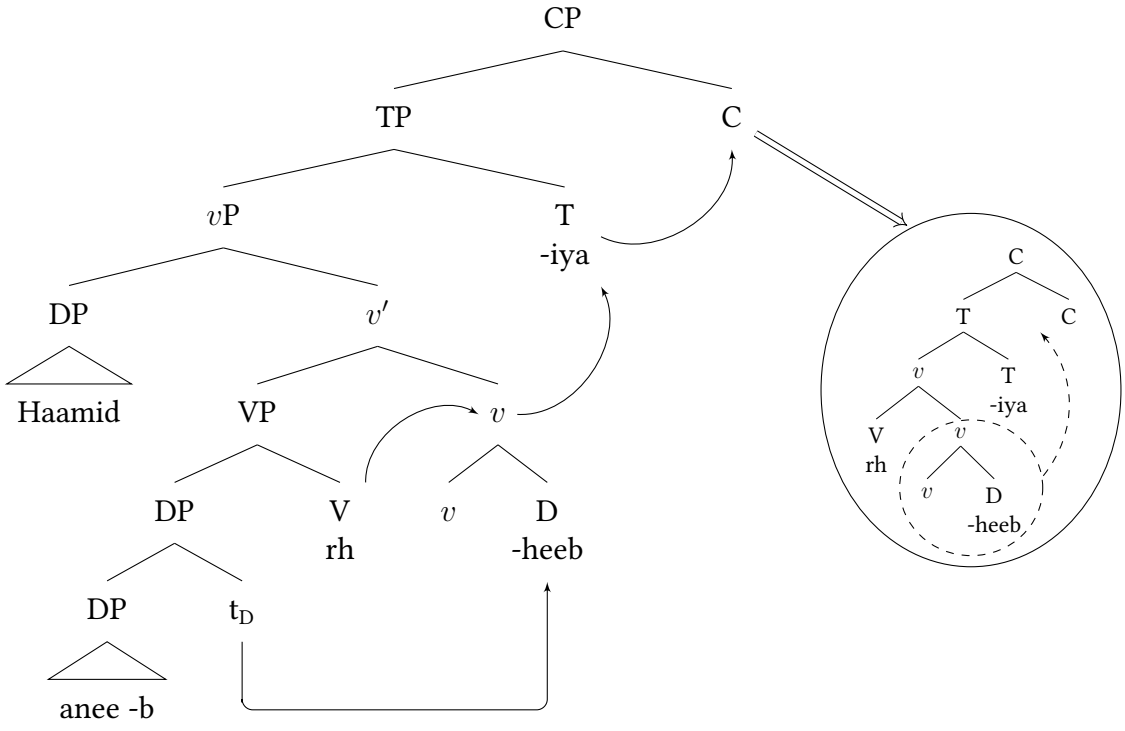
b. *Fandiigeek, baanadiima*
√fdg -an,ii- -eek baa- √ndm -a,ii- -a
be.lost -PRES.SG- -COND NEG.IMP- regret -NEG.IMP- -MSG
If it's lost, don't regret it.

Bidhaawyeet clauses have basic SOV word order. This can be seen in example (14) which contains a pronominal object *aneeb* ('me') preceding the verb. First- and second-person objects may also be marked by a dedicated suffix on the verb that we refer to as the 'object suffix'. In (14), the overt first person object *aneeb* ('me') is doubled by the object suffix *-heeb* on the verb (Roper 1928: 29 and Wedekind et al. 2007: 133 see this as a strategy for emphasis). It is also common for the object pronoun to be omitted with just the object suffix on the verb (this will be the case in the majority of our examples).

(14) *Haamid aneeb rhiyaheeb*
Haamid anee -b rh -iya -heeb
Haamid 1SG -ACC see -PFV.3MSG -me
'Haamid saw me.'

In the tree in (15), we illustrate the structure we adopt for examples with object suffixs. First, we treat the object suffix on the verb as an incorporated pronoun (e.g. Baker & Kramer 2018). We represent it as a D^0 head that undergoes movement to v. In cases of doubling, the pronoun originates as part of a 'big DP' structure (Uriagereka 1995, Nevins 2011, Arregi & Nevins 2012). In examples with just an object suffix on the verb, the D^0 is merged directly in argument position with a requirement to incorporate into the verbal complex.

(15) *Haamid aneeb rhiyaheeb*
Haamid anee -b rh -iya -heeb
Haamid 1SG -ACC see -PFV.3MSG -me
'Haamid saw me.'



Furthermore, we assume that the verb moves to C in all clause types in Bidhaawyeet. Movement of the verb to C will result in the complex head shown in (15). Here, it is clear that we derive an unexpected word order given standard assumptions about how head movement relates to affix order (see e.g. Harley 2011). We require that the v hosting the object suffix is linearized following the tense/agreement exoponent in T. For this reason, there must be some additional morphological process that creates this reordering, e.g. metathesis/Local Dislocation (Embick & Noyer 2001, Embick 2007) or displacement driven by morphotactic constraints (Arregi & Nevins 2012, 2018).[7]

With these assumptions in place, we can turn to the core case of apparent long-distance allomorphy that we will be concerned with in this paper. The examples in (16) all contain a noun modified by a relative clause as the subject or object.[8] The target of relativization in all cases is the subject of the embedded verb *rh* ('see'). The object of the verb in the relative clause is the second singular object 'you' which is marked only by the object suffix on the verb. What is of interest here is that the form of the second singular object suffix varies according to the features of the head noun of the relative clause. In (16a), the noun modified by the relative clause is a singular object, as the definiteness marker *oo-* on the noun makes apparent. Here, the object suffix inside the relative clause takes the form *-ook*. If the same relative clause structure is used as a subject, however, the form of the object suffix takes a different form, namely *-uuk* (16b). This reflects the fact that the head of the relative clause is nominative singular. The determination of the form of the object suffix by the head noun can also be seen with plural arguments. An object suffix inside a relative clause that modifies an accusative plural noun such as *ndaa* ('men') takes the form *-eek* (16c). If the head noun is nominative plural, the second singular object suffix takes another form still, namely *-aak* (16d).

(16) a. *Ootak iru rhiyanook akteen*

[$_{DP}$ oo- tak [$_{CP}$ iru rh -iya [-ook]]] akteen
DEF.ACC.MSG- man yesterday see -PFV.3MSG [-you$_{ACC.SG}$] know.1SG

'I know the man who saw you (sg.) yesterday.'

b. *Uutak iru rhiyanuuk ikteenheeb*

[$_{DP}$ uu- tak [$_{CP}$ iru rh -iya [-uuk]]] ikteen -heeb
DEF.NOM.MSG- man yesterday see -PFV.3MSG [-you$_{NOM.SG}$] know.3MSG -me

'The man who saw you (sg.) yesterday knows me.'

c. *Eenda iru rhiyaaneek akteen*

[$_{DP}$ ee- ndaa [$_{CP}$ iru rh -iyaan [-eek]]] akteen
DEF.ACC.MPL- men yesterday see -PFV.3PL [-you$_{ACC.PL}$] know.1SG

'I know the men who saw you (sg.) yesterday.'

d. *Aanda iru rhiyaanaak ikteennaheeb*

[$_{DP}$ aa- ndaa [$_{CP}$ iru rh -iyaan [-aak]]] ikteenna -heeb
DEF.NOM.MPL- men yesterday see -PFV.3PL [-you$_{NOM.PL}$] know.3PL -me

'The men who saw you (sg.) yesterday know me.'

This four-way contrast can be replicated for the different pronoun types. For example, (17) shows the

[7] Karlos Arregi (p.c.) points out that the relevant constraint could be a Nonfinality requirement on T, i.e. that it be non-final within its own maximal projection $T^{0^{max}}$. This would be avoided by adjoining the v complex to T prior to linearization of the complex head. This parallels the analysis of Ergative Metathesis and L-Support in Basque auxiliaries in Arregi & Nevins (2012), which are subject to the same locality domain (see Arregi & Nevins 2012: 336–338 in particular). In general, we think it is analytically beneficial to have v form a constituent with a D head realizing the object suffix, as v can be overt in relative clauses in which case it is always displaced together with the object suffix (see section 3.3).

[8] Here, we have simplified the gloss of the matrix verb 'know' in all examples. A form such as *akteen* in (16a), for example, is a synchronically unpredictable present tense form of the non-concatenative verb $\sqrt{kn}$ 'know'.

four different forms of the first person plural object suffix in a relative clause.

(17) a. *Ootak iru rhiyanoon tikteena*

[$_{DP}$ oo- tak [$_{CP}$ iru rh -iya [-oon / -us$_{ACC.SG}$]]] tikteena
DEF.ACC.MSG- man yesterday see PFV.3MSG know.2MSG

'You (sg.) know the man who saw us yesterday.'

b. *Uutak iru rhiyanuun ikteenhook*

[$_{DP}$ uu- tak [$_{CP}$ iru rh -iya [-uun / -us$_{NOM.SG}$]]] ikteen -hook
DEF.NOM.MSG- man yesterday see -PFV.3MSG know.3MSG -you

'The man who saw us yesterday knows you (sg.).'

c. *Eenda iru rhiyaaneen tikteena*

[$_{DP}$ ee- (n)daa [$_{CP}$ iru rh -iyaan [-een / -us$_{ACC.PL}$]]] tikteena
DEF.ACC.MPL- men yesterday see -PFV.3MPL know.2MSG

'You (sg.) know the men who saw us yesterday.'

d. *Aanda iru rhiyaani ikteennahook*

[$_{DP}$ aa- (n)daa [$_{CP}$ iru rh -iyaan [-aan / -us$_{NOM.PL}$]]] ikteenna -hook
DEF.NOM.MPL- men yesterday see -PFV.3MPL know.3MPL -you

'The men who saw us yesterday know you (sg.).'

This co-variation between the head noun of the relative clause and the object suffix inside the relative clause is fully systematic across both first/second person and singular/plural forms. The full set of object suffix forms is given in the paradigm in (18).

(18)

		Head of relative clause			
		ACC.SG	ACC.PL	NOM.SG	NOM.PL
1SG	-heeb	-oo	-ee	-uu	-ii
1PL	-hoon	-oon	-een	-uun	-aan
2SG	-hook	-ook	-eek	-uuk	-aak
2PL	-hookna	-ookna	-eekna	-uukna	-aakna

Final vowels of nouns, pronouns, and adjectives in open syllables are always realized short with predictable reductions of underlying vowel qualities (/eː/ → [i]; /oː/ → [u]). For the first person singular forms, we thus see either *-u* or *-i* when final in a relative clause. This is illustrated for accusative singular and accusative plural in the examples in (19).

(19) a. *Ootak iru rhiyanu tikteena*

[$_{DP}$ oo- tak [$_{CP}$ iru rh -iya [-oo / -me$_{ACC.SG}$]]] tikteena
DEF.ACC.MSG- man yesterday see PFV.3MSG know.2MSG

'You (sg.) know the man who saw me yesterday.'

b. *Eenda iru rhiyaani tikteena*

[$_{DP}$ ee- (n)daa [$_{CP}$ iru rh -iyaan [-ee / -me$_{ACC.PL}$]]] tikteena
DEF.ACC.MPL- men yesterday see -PFV.3MPL know.2MSG

'You (sg.) know the men who saw me yesterday.'

While one can clearly identify some morphological subregularities in this paradigm, we refrain from further subanalyzing these affixes and instead treat them as nondecomposable in the sychronic

grammar of the language. This decision is defended in more detail in section 4.3.1. As is clear from (19), there are no third person forms of the object suffix that we find on verbs in contemporary Port Sudan Bidhaawyeet. Here, a third person object (singular or plural) of a transitive verb is inferred in the absence of any overt morpheme.

To the best of our knowledge, this pattern of apparent long-distance allomorphic conditioning in relative clauses has not been described in previous work.[9] It has been noted in previous literature that the forms of what we are calling object suffixes overlap with possessive markers in the noun phrase. Consider the form of the possessive pronoun in (20). Here, we find the same form we do with a relative clause whose head is nominative, namely *-uuk*.

(20) *Tukwaatuuk rhitaheeb*

[$_{DP}$ tuu-	kwaa -t	-uuk]	rh -ita	-heeb
DEF.NOM.FSG-	sister -F	-your$_{NOM.SG}$	see -PFV.3FSG	-me

'Your sister saw me.'

We will return to these possessive cases in section 5 and show that unified analysis is possible.

Returning to the object suffixes, we will argue that apparent non-local conditioning into a relative clause by the case and number features of the head noun is actually a more local relation than it may appear on the surface, since the features of the head noun are available on the relative CP itself by virtue of a process of nominal concord in the language. In order to show this, we now turn to the morpho-syntax of the nominal domain in Bidhaawyeet.

3 The nominal domain in Bidhaawyeet

3.1 Case and definiteness marking

Definite nouns in Bidhaawyeet are marked by a prefix on the noun that also reflects the case, number and gender of the noun. A definite masculine singular object such as 'the father' takes *oo-*, for example, as in (21a). A corresponding feminine singular object like 'the mother' is prefixed with *too-* (21b).

(21) a. *Oobaaba rhan*

oo-	baabaa	rh -an
DEF.ACC.MSG-	father	see -PFV.1SG

'I saw the father.'

b. *Toondi rhan*

too-	ndee	rh -an
DEF.ACC.FSG-	mother	see -PFV.1SG

'I saw the mother.'

These determiner forms are also used as concordial markers on modifiers, as can be seen with the postnominal adjectives in (22).

(22) *Ootak w'eera uragaaga*

oo-	tak	oo-	eera	oo-	ragaaga
DEF.ACC.MSG-	man	DEF.ACC.MSG-	fair	DEF.ACC.MSG-	tall

'the tall, fair-complected man'

Here, we see that the definite marker here takes different surface forms: *oo-* (full), *u-* (monomoraic) and *w-* (non-moraic). The full set of definite determiner forms is given below in (23). Definite prefixes may surface in one of three forms: the full form or one of two reduced forms that we call 'monomoraic'

[9]The phenomenon does, however, appear in examples in prior descriptive work. Roper (1928: 94) gives the example, 'Aanda yi'ithab'anaak naa daaya?' 'The men who beat you (were) what men?' (orthography normalized), which contains the nominative plural allomorph of the second singular pronoun (*-aak*). The example is adduced in Roper to show the position of the object suffix of a relativized verb, but the particular form of the suffix receives no comment.

and 'non-moraic' (Roper 1928: 9; Wedekind et al. 2007: 49–51; Vanhove 2017: 29–30). The full forms, which we treat as bimoraic, typically occur with monosyllabic nouns and adjectives that begin with non-glottal consonants. Reduced forms are triggered by polysyllabic nouns and adjectives and by glottal-initial nouns and adjectives. The monomoraic form is always available where reduction is triggered, while the non-moraic form is optionally available before glottal consonants.

(23) *Definite determiner forms*

	FULL	MONOMORAIC	NON-MORAIC
MSG.NOM	uu-	u-	w-
MSG.ACC	oo-		
MPL.NOM	aa-	i-	y-
MPL.ACC	ee-		
FSG.NOM	tuu-	tu-	t-
FSG.ACC	too-		
FPL.NOM	taa-	ti-	
FPL.ACC	tee-		

When it comes to indefinite nouns, the suffix *-t* appears on both indefinite feminine subject and objects, as can be seen in (24) and (25). We therefore view this a general marker of feminine gender that is not specified for case.

(24) *Deet rhan*

ndee -t/-F rh -an
mother see -PFV.1SG
'I saw a mother.'

(25) *N'aayt ganaayt sakanaata, "…" tidi*

n'aay -t/-F ganaay -t/-F sakanaa -ta "…" ti- √dy
goat gazelle ask.news -PFV.3FSG 3FSG- say
'A goat asked a gazelle, "…"'

Masculine indefinite objects such as 'a father' in (26a) are marked with the suffix *-b*. We treat this affix as a general marker of accusative that does not encode masculine gender. The reason for this is that it also surfaces on vowel-final feminine proper names such as *Faatima* (26b).[10]

(26) a. *Baabaab rhan*
baabaa -b rh -an
father -ACC see -PFV.1SG
'I saw a father.'

b. *Uutak Faatimaab rhiya*
uu- tak Faatima -b rh -iya
DEF.NOM.MSG- man Faatima -ACC see -PFV.3MSG
'The man saw Faatima.'

Both of these determiner forms are also used to mark concord on modifiers to an indefinite noun (27).

[10]For feminine objects, we assume that the feminine suffix *-t* blocks the general accusative suffix *-b*. This restriction may be phonological, resulting from the illicit cluster **tb/*bt* or could be an instance of morphological blocking.

(27) a. *kwaat daayiit wint*
kwaa -t daayii -t win -t
sister -F good -F big -F
'a good, big sister'

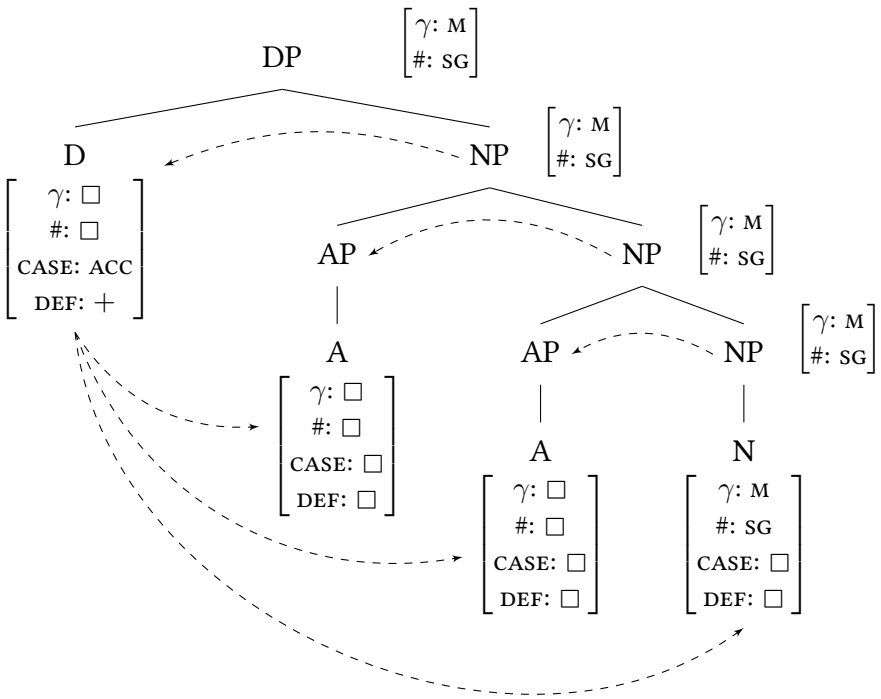
b. *hadhaab akraab hargwaab*
hadhaa -b akraa -b hargwaa -b
lion -ACC strong -ACC hungry -ACC
'a strong, hungry lion'

Modifiers of definite nouns take one of the corresponding definiteness markers in (23). We will see these forms again in the context of relative clauses. For now, we will move on to discuss our assumptions about the mechanisms for deriving concord in examples such as (27).

3.2 Nominal concord

Our assumptions about concord works in the nominal domain broadly follow those laid out in Norris (2014). First, there must be some mechanism that spreads the relevant features involved in concordial marking throughout the noun phrase. Here, we follow Norris (2014: 135–137) in assuming that features such as gender and number originate 'low' on the noun and percolate up through the nominal domain. These features are thereby passed on to all modifiers and the D head, as shown in (28).[11] For features that originate on D, such as case and definiteness, an alternative mechanism for distributing feature values 'downwards' is necessary (Norris 2014: 148–151). This can be captured by means of a special rule (e.g. Pesetsky 2013, Norris 2014) or by assuming DP-internal Agree coupled with feature sharing (Danon 2011). For present purposes, the choice between these approaches does not matter, as long as the definiteness and case values on D spread down to the noun and its modifiers, as in (28).

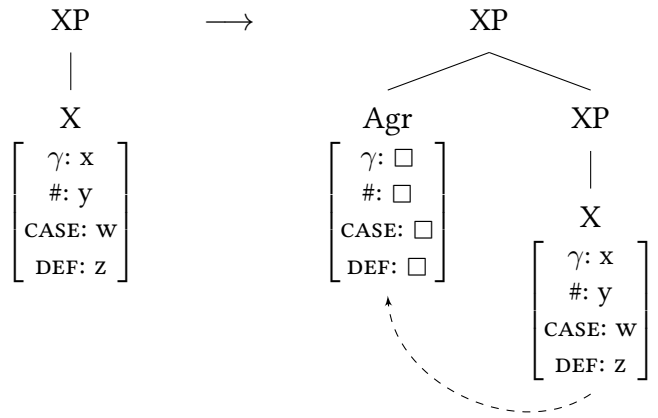
(28)



The final component of Norris' theory of concord that we adopt is the assumption that the exponents of concord themselves are post-syntactically inserted 'dissociated morphemes' (Halle & Marantz 1993). Norris (2014) assumes that nodes are postsyntactically adjoined to modifiers, as in (29). The features that the modifier acquired under concord are then copied onto Agr where they can be realized.

[11] Note that we make the minimal assumptions necessary about the structure of the noun phrase. One could assume that the relevant features originate on n instead and this would not substantially change what we are proposing here. Here, we use a box '□' to indicate an unvalued feature which will ultimately receive a value under concord.

(29) *Postsyntactic Agr node insertion*



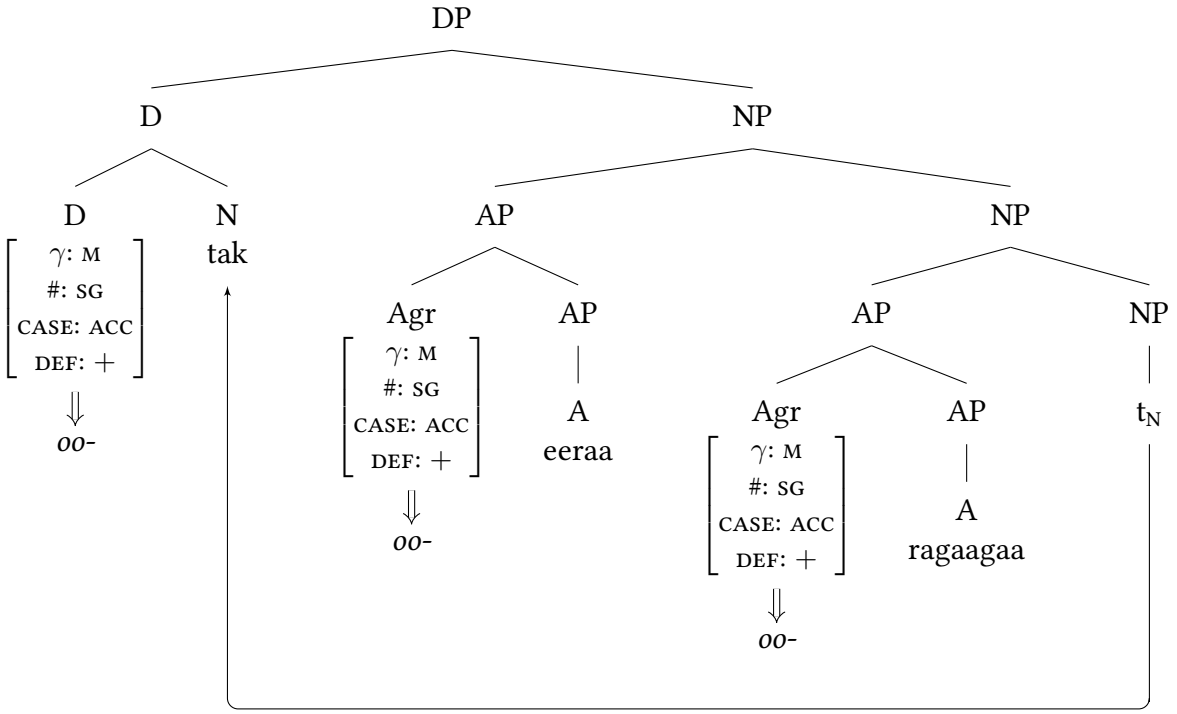
We depart from Norris in assuming that the Agr node can also be adjoined to the entire modifier phrase, as recently argued for by Hanink (2018). This assumption is not crucial for concordial markers on adjectives, but will become relevant when we consider relative clauses in the following section.

The analysis of an example such as (22) is given below in (30). Here, the D head and the postsyntactic Agr nodes are realized as the relevant determiner forms. In addition, there is head movement of the noun to D to derive the postnominal ordering of modifiers.

(30) *Ootak w'eera uragaaga*

oo-	tak	oo-	eeraa	oo-	ragaagaa
DEF.ACC.MSG-	man	DEF.ACC.MSG-	fair	DEF.ACC.MSG-	tall

'the tall, fair-complected man'

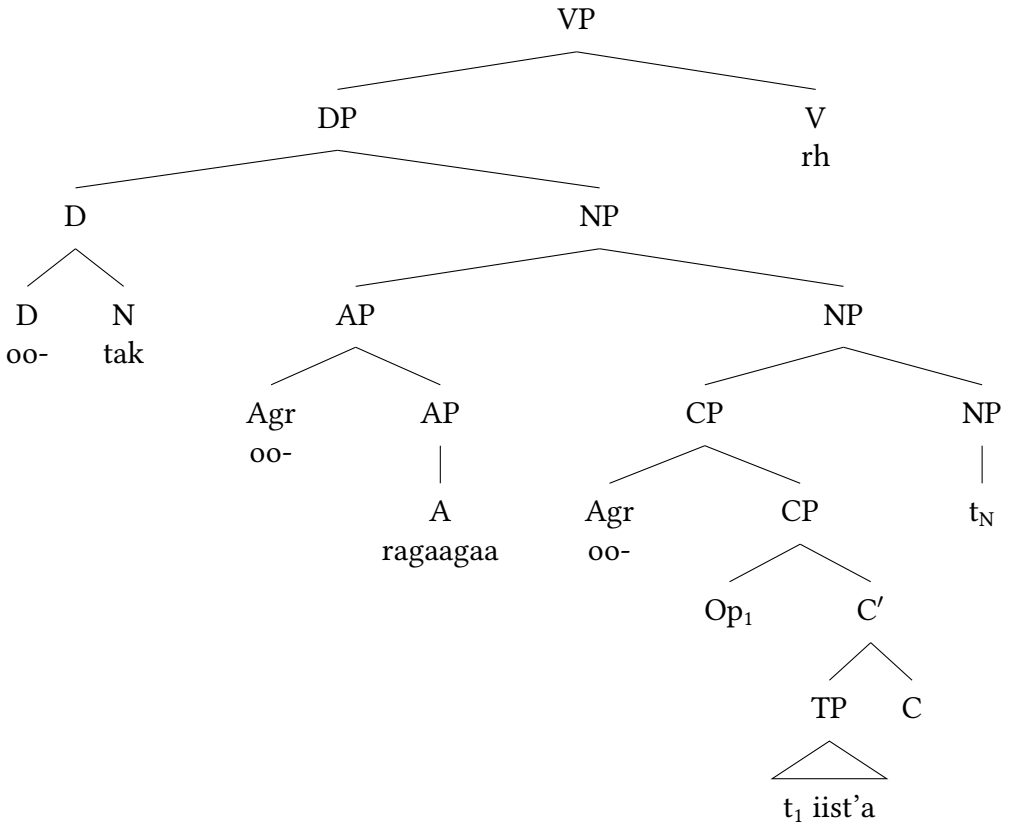


These are the assumptions that will be relevant for our analysis of how concord feeds local allomorphy in relative clauses. In the following section, we turn to the structure of Bidhaawyeet relatives in more detail.

3.3 Relative clauses

We have already seen examples of relative clauses containing an object suffix, e.g. (16). Another example and the corresponding structural analysis is given in (31).[12]

(31) *Ootak uragaaga w'iist'a rhan*
[$_{DP}$ oo- tak [$_{AP}$ oo- ragaagaa] [$_{CP}$ oo- ii- √s'
DEF.ACC.MSG- man DEF.ACC.MSG- tall DEF.ACC.MSG- IPFV.3MSG- sit
-t-]] rh -an
-IPFV- see -PFV.1SG
'I saw the tall man who was sitting.'



Here, we see an importance difference to the examples in (16). The relative clause consisting of the intransitive verb 'sit' bears the concord marker *oo-* just like the adjective 'tall' does. As the structure below (31) makes clear, we assume that relative operator in Bidhaawyeet is null.[13] The question now is why the concord prefix appears on some relative clauses, but not others. The answer here seems to involve a surface constraint on the realization of the Agr node adjoined the relative CP. Recall example (16a), which we have repeated below as (32a). Here, there is no object prefix on the verb, and indeed no prefix is possible. The same is true if we have an overt object pronoun at the left edge of the relative clause that is doubled by the object suffix (32b). If we drop the initial adverb, however, the

[12]We treat the final *-a* in the form *w'iist'a* as epenthetic; it therefore does not appear in the glossing. Generally, final /tʔ/ is not phonotactically licit in the language.

[13]There is the possibility of trying to analyze the prefix *oo-* as the relative operator itself. We see at least two problems with this. First, the case features on the relative pronoun do not reflect those of the operator but rather those of the head. For example, the prefix on the subject relative in (31) is marked for accusative rather than nominative, meaning that we would have to have to assume that there is case attraction here (see e.g. Deal 2016, Georgi & Salzmann 2016). Second, these forms are identical to the definite markers we find on other modifiers. This identity of form would have to be treated as coincidental if they were relative operators.

concordial prefix appears (32c).

(32) a. *Ootak iru rhiyanook akteen*

[$_{DP}$ oo- tak [$_{CP}$ iru (*oo-) rh -iya -ook]]
DEF.ACC.MSG- man yesterday (*DEF.ACC.MSG-) see -PFV.3MSG -you$_{ACC.SG}$
akteen
know.1SG

'I know the man who saw you yesterday.'

b. *Ootak barook rhiyanook akteen*

[$_{DP}$ oo- tak [$_{CP}$ barook (*oo-) rh -iya -ook]]
DEF.ACC.MSG- man you.ACC (*DEF.ACC.MSG-) see -PFV.3MSG -you$_{ACC.SG}$
akteen
know.1SG

'I know the man who saw you yesterday.'

c. *Ootak urhiyanook akteen*

[$_{DP}$ oo- tak [$_{CP}$ oo- rh -iya -ook]] akteen
DEF.ACC.MSG- man DEF.ACC.MSG- see -PFV.3MSG -you$_{ACC.SG}$ know.1SG

'I know the man who saw you.'

What we think is at play here is a phonological restriction on the realization of the Agr node adjoined to CP. Its prefixal nature means that it must 'lean' rightward onto a suitable host (Embick & Noyer 2001). This host must be a head, presumably corresponding to a phonological word (see e.g. Selkirk 2011). In the cases in which the prefix does not appear (32a–b), a phrasal constituent intervenes between the verb and the left edge of the relative CP where we hypothesize that the Agr node is adjoined. In this environment, the exponent of Agr is not adjacent to the verb and therefore cannot be inserted. This could be captured as a *Condition on Insertion* in the sense of Kalin & Rolle (2023): The concordial prefix can only be realized if it is adjacent to a syntactic head (or alternatively a prosodic word corresponding to one).

In some cases, we find further concord markers on the relative clause. In addition the definite concord marker on a relative clause we also sometimes find a suffix that corresponds to the indefinite markers in (27). In (33a), in addition to the definite feminine nominative singular prefix *tuu-*, we find the suffix *-t* that is typically associated with feminine indefinites. Alongside the definite masculine accusative singular marker *oo-*, the relative clause in (33b) also takes the suffix *-b* found on indefinite masculine objects.[14] We call these 'secondary concord markers'.

[14] In addition, we find the suffix *-iyee* in cases of object relativization such as (33b). This affix has other phonological realizations (e.g. *-i* or *-ee*) depending on its phonological environment. We will not provide a detailed analysis of this affix here, but we suspect that it is the realization of a v head that indexes successive-cyclic relativization of an object through the vP edge. Some intriguing support for this view comes from the observation that this suffix appears on both the matrix and the embedded verb in a cases of long-distance relativization:

(i) *Ootak utikteeneeb hiisanyee tumhattaatiib amsi rhan*

[$_{DP}$ oo- tak [$_{CP}$ [$_{CP}$ oo- tikteena -iyee -b] hiis -ani -iyee]] too-
DEF.ACC.MSG- man DEF.ACC.MSG- know.2MSG -OBJ.REL -ACC think -PRES.1SG -OBJ.REL DEF.ACC.FSG-
mhattaa -t -iib amsi rh -an
station -F -LOC today see -1SG

'I saw the man who I think you know in the station today.'

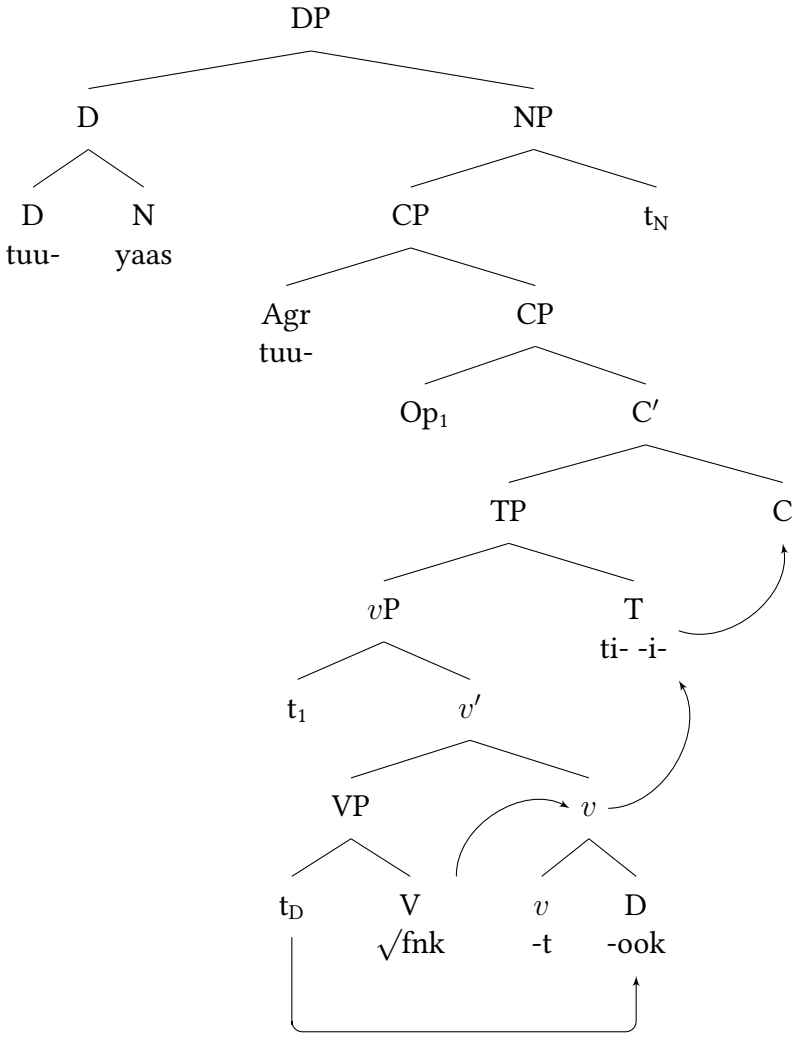
While this seems to instantiate the classic morphological signature of successive-cyclicity (see e.g. McCloskey 2002, Georgi 2014, van Urk 2020), we leave a more in-depth investigation of this phenomenon to future research.

(33) a. *Tuukaam tudhaabtiniit eeta*
[$_{DP}$ tuu- kaam [$_{CP}$ tuu- dhaab -tinii [-t / -F]]] ee -ta
DEF.NOM.FSG camel DEF.NOM.FSG run -PRES.3FSG come -PFV.3FSG
'The camel.F that is running came.'

b. *Ookaam w'areeyanyiyeeb rhani*
[$_{DP}$ oo- kaam [$_{CP}$ oo- aree -ani -iyee [-b / -ACC]]] rh -ani
DEF.ACC.MSG camel DEF.ACC.MSG like -PRES.1SG -OBJ.REL see -PRES.1SG
'I see the camel.M that I like.'

It might be tempting to also view these suffixes as an additional Agr node adjoined to CP. There are some challenges for this view, though. Chief among them is the fact secondary concord markers appear to be structurally lower than the primary ones. In (34), the secondary concord marker *-t*, indexing feminine gender, appears together with the nominative feminine singular determiner *tuu-* on the verb in the relative clause. Importantly, *-t* precedes the object suffix, which would be unexpected if it were attaching outside the relative clause.

(34) *Tuuyaas tutifniktuuk uut tikati*
[$_{DP}$ tuu- yaas [$_{CP}$ tuu- ti- √fnk [-t / -F] [-uuk / -you$_{NOM.SG}$]]] uut
DEF.NOM.FSG- dog DEF.NOM.FSG- 3FSG- bite this.FSG
ti- √ky -a,i-
3FSG- be -PRES-
'The dog.F that bit you has got to be this one.'



As the structure in (34) makes clear, we assume that secondary concord markers are realizations of the v head to which the object suffix adjoins. The form of v will ultimately have to be sensitive to the case/gender features of the head noun. We elaborate on this point further in the following section. If the object suffix adjoins to the right of v, then the position of the secondary concord marker inside the relative clause can be accounted for. We make similar assumptions for the object relative marker, as discussed in footnote 14.[15]

4 Allomorphy in relative clauses

With these background assumptions about the structure and form of the nominal domain, in addition to our analysis of relative clauses in Bidhaawyeet, we can now return to our core puzzle about the apparent long-distance allomorphy of object suffixes in relative clauses. We will show how what we have proposed so far comes together to provide a strictly local analysis of apparent long-distance allomorphy with object suffixes in which allomorphic conditioning holds within the same complex head. We will then illustrate an important consequence of this proposal, namely that conditioning is lost in periphrastic constructions, Finally, we will briefly discuss, and ultimately reject, some alternative approaches to both the morphological paradigm we are analyzing and the theory of allomorphy that we adopt.

4.1 Deriving apparent non-local allomorphy

We now return to long-distance allomorphy in relative clauses. Consider again the example in (32c), repeated below in (35). In the absence of a phrasal constituent at the left edge of the relative clause, the concordial marker *oo-* appears on the verb. As laid out in section 3.2, this prefix is the realization of features from the D and N heads that have been passed onto the relative CP under concord.

(35) *Ootak urhiyanook akteen*

[$_{DP}$ oo-	tak	[$_{CP}$ oo-	rh	-iya	-ook	]] akteen
DEF.ACC.MSG-	man	DEF.ACC.MSG-	see	-PFV.3MSG	-you$_{ACC.SG}$	know.1SG

'I know the man who saw you.'

The full structure of the relative clause is shown in (36). We have omitted head movement of the noun here for the sake of readability. As a modifier of the noun, values for definiteness, case, gender and number are passed on to the relative CP via concord. This means that the relevant features are also present on the C head. As indicated in the structure, we assume that there is movement of the verb to C in relative clauses, too. The other affixes, including the object suffix D head adjoined to v, are picked up along the path of head movement.

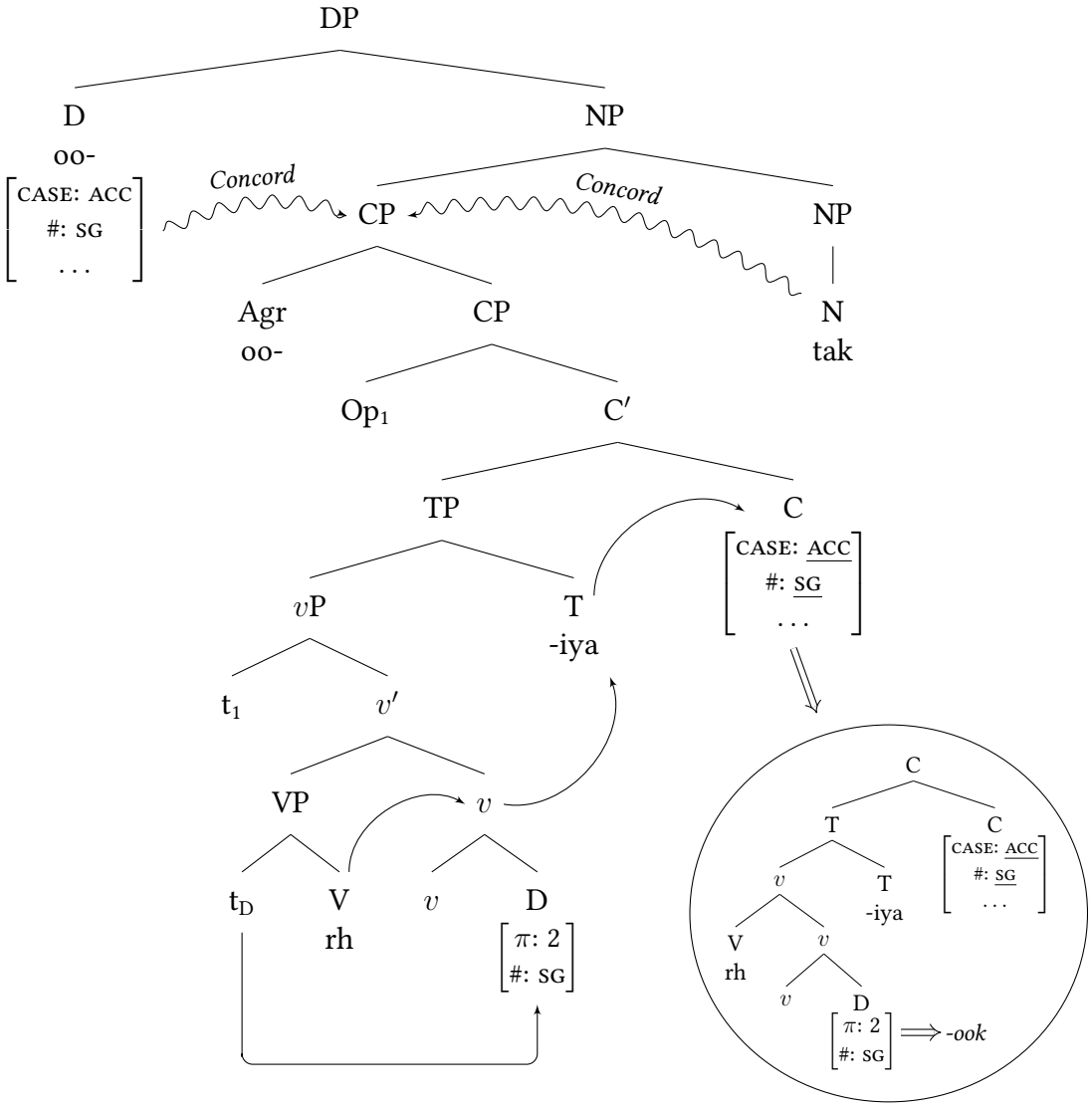
[15] A relevant question here is whether one can have secondary concord marking and an object relative suffix at the same time, if both are assumed to occupy the v position. As the example in (i) shows, this is in fact possible if the relative clause contains a ditransitive verb like 'give'. For this example, we would assume that *-iyee* and *-t* both occupy a v head that has undergone prior Fission (Halle 1997).

(i) *Tookaam t'ahiyeetook rhan*

[$_{DP}$ too-	kaam	[$_{CP}$ too-	a-	$\sqrt{}$hy	-iyee	-t	-ook	]]	rh	-an
DEF.ACC.FSG-	camel	DEF.ACC.FSG-	1SG-	give	-OBJ.REL	-F	-you$_{NOM.SG}$		see	-1SG

'I saw the camel that I gave to you.'

(36)



The result of head movement to C is a complex head containing both the C head bearing the relevant features acquired under concord and the D head which carries the features of the object suffix (though we have omitted the previously mentioned morphological displacement operation; see section 4.3.2).

As we have seen, the exponent that realizes the person and number features on D is also dependent on the case and number feature of the noun that the relative clause modifies. Since these features are passed on to the relative CP and its head, where they can be realized by the Agr head, they are also locally available within the complex head containing the object suffix. For this reason, the determination of the correct allomorph for the object suffix does not require access to any information outside the locality domain posited by Bobaljik (2012) and Bobaljik & Harley (2017). Consequently, what may appear at first glance to be non-locally triggered allomorphy can, given the analysis in (36), be treated as actually local allomorphy within the same complex head domain.

To ensure that the relevant second singular form *-ook* is inserted, the realization rules for D head hosting the object suffix will have to include a contextual specification corresponding to the features on the locally c-commanding C head. In order to highlight the locality condition, we include this directly in the formulation of the insertion rules for the second singular object suffix forms in (37). A rule such as (37a), which is the relevant one for the tree in (36), states that a head bearing the features second person and singular are realized by *-ook* if that head is c-commanded within the same complex

head X^0 by another head X bearing the features accusative and singular. For the analysis in (36), the X in the rule corresponds to C. As we will see in later sections, there are good reasons to keep the identity of this head neutral with respect to syntactic category. In order to derive the full set of second singular forms that we have seen, four other rules are required that differ minimally from each other in their contextual specification. These are given in (37b–e).

(37) a. $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-ook* / $[\,[\ldots\ \_\_\ \ldots]\ \overset{\text{X}}{\left[\begin{smallmatrix}\text{CASE: ACC}\\ \text{\#: SG}\end{smallmatrix}\right]}\,]_{X^0}$

b. $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-uuk* / $[\,[\ldots\ \_\_\ \ldots]\ \overset{\text{X}}{\left[\begin{smallmatrix}\text{CASE: NOM}\\ \text{\#: SG}\end{smallmatrix}\right]}\,]_{X^0}$

c. $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-eek* / $[\,[\ldots\ \_\_\ \ldots]\ \overset{\text{X}}{\left[\begin{smallmatrix}\text{CASE: ACC}\\ \text{\#: PL}\end{smallmatrix}\right]}\,]_{X^0}$

d. $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-aak* / $[\,[\ldots\ \_\_\ \ldots]\ \overset{\text{X}}{\left[\begin{smallmatrix}\text{CASE: NOM}\\ \text{\#: PL}\end{smallmatrix}\right]}\,]_{X^0}$

e. $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-hook*

Here, it is important to highlight that we treat the form that is found outside of relative clauses as the Elsewhere case, lacking any contextual specification. It therefore counts as less specific and will only be available when none of the contexts mentioned in the other rules is met. Similar sets of rules with minimally different person and number values on the left side of the rule will still be required to derive the complete paradigm in (18). For reasons of space, we will not list all of the rules here.

4.2 Periphrastic constructions

The analysis of apparent long-distance allomorphy that we have proposed is rather straightforward: Nominal concord passes the features of the entire DP on to the relative clause and, as a result, the features are present on the head of the CP. Given the assumption of head movement to C, the features are contained within the same local domain, defined as the maximal complex head containing both the trigger and target of allomorphy. One could object, however, that head movement all the way to C is hypothesized, but not motivated by the data. On the surface, one could argue that it is unclear that head movement goes this high, even if it is a crucial component of an analysis that seeks to uphold a more stringent locality condition for allomorphy. In this section, we present what we think is compelling evidence that head movement to C is indeed a necessary condition for the apparent 'external' condition of object suffix forms by the head of the relative clause. The evidence for this comes from periphrastic constructions in which the verb hosting the object suffix cannot move all the way to C. Here, the clear prediction of our analysis is that external conditioning by the head noun should fail and this is indeed what we find.

4.2.1 Periphrastic future

The first periphrastic construction we will consider is the future tense. The future tense in Bidhaawyeet is expressed by means of a periphrastic construction involving a finite form of the verb $\sqrt{dy}$ ('say') and a verb in a special future form. For suffixing verbs, the future form is *-i* (38a), with a special form

-ni if the subject is 1st person plural (38b). For templatic verbs, the future form of the verb is similar to that of the past imperfective. For most verbs, the active future is formed by the prefix *(n)ii-* (38c).[16]

(38) a. *Kantiimeek, giigi andi*
[$_{CP}$ √ktm -an-ii- -eek] giig -i a- √dy -n-
arrive -PRES.SG- -if leave -FUT 1SG- say -PRES.SG-
'If he arrives, I'll leave.'

b. *Yakni neeyad*
yak -ni nee- √dy -a-
start -FUT.1PL PRES.1PL- say -PRES-
'We will start.'

c. *Ani urabeeyu har'u y'ush kaadi*
ani oo- rabee -oo har' -oo ii- √'sh ka- a- √dy
I DEF.ACC.MSG- goods -my after -my FUT- leave.behind NEG- 1SG- say
'I will not leave my goods behind.'

What is clear from these examples is that it is the verb √*dy* ('say') that bears tense and agreement morphology and therefore plausibly moves to T and then to C. The lexical verb will remain in some lower position in the clause and could never skip the higher verb due to the Head Movement Constraint. With this in mind, a periphrastic construction implies the lack of movement of the lexical verb to C. This is relevant when we consider the analysis of object suffixes in relative clauses proposed in the previous section. The prediction of this account is clear: If the verb hosting the object suffix cannot move to C, then the form of the object suffix should not be conditioned by the features of the head noun of the relative clause. In other words, a periphrastic construction is predicted to bleed external conditioning of the object suffix in a relative clause.

As (39) shows, this is precisely what we find. This example contains the periphrastic future tense in the relative clause. Furthermore, the second person singular object of the verb 'marry' is flagged by the object suffix (note that we treat <*u*> in the root √*d'r* 'marry' as epenthetic). Revealingly, however, the suffix does not take the form we would expect to find in a relative clause whose head noun is a singular object, namely *-ook*. Instead, we find the Elsewhere form *-hook* that we see in matrix clauses.

(39) *Ootak w'iid'urhook indiib akteen*
[$_{DP}$ oo- tak [$_{CP}$ oo- ii- √d'r -hook i- √dy -n-
DEF.MSG.ACC- man DEF.ACC.MSG- FUT- marry -you 3MSG- say -PRES.SG-
-b]] akteen
-ACC know.1SG
'I know the man who will marry you.'

We can compare this to the minimally different example in (40), which contains a synthetic past tense form of the verb. Here, the object suffix surfaces in its expected form *-ook*.

[16]There is an additional future form that won't be relevant to the discussion here. For all verbs, this is the suffix *-a*, as shown by the example in (i). We gloss this as the 'volitional future'. In previous literature, this form has been given different names, e.g. Vanhove calls it the 'desiderative' and Wedekind refers to it as an 'intentional tense/aspect'.

(i) *Kadheet hooy fir'a andi*
kadhee -t hooy √fr' -a a- √dy -n-
knot -F ABL.3MSG take.out -FUT.VOL 1SG- say PRES.SG
'I'm going to remove the knots (from a piece of wood)'.

One should also note that future verb forms can be used with a hortative effect, e.g. *Yakni!* ('Let's go!'), compare (38b).

(40) *Ootak w'id'urook akteen*

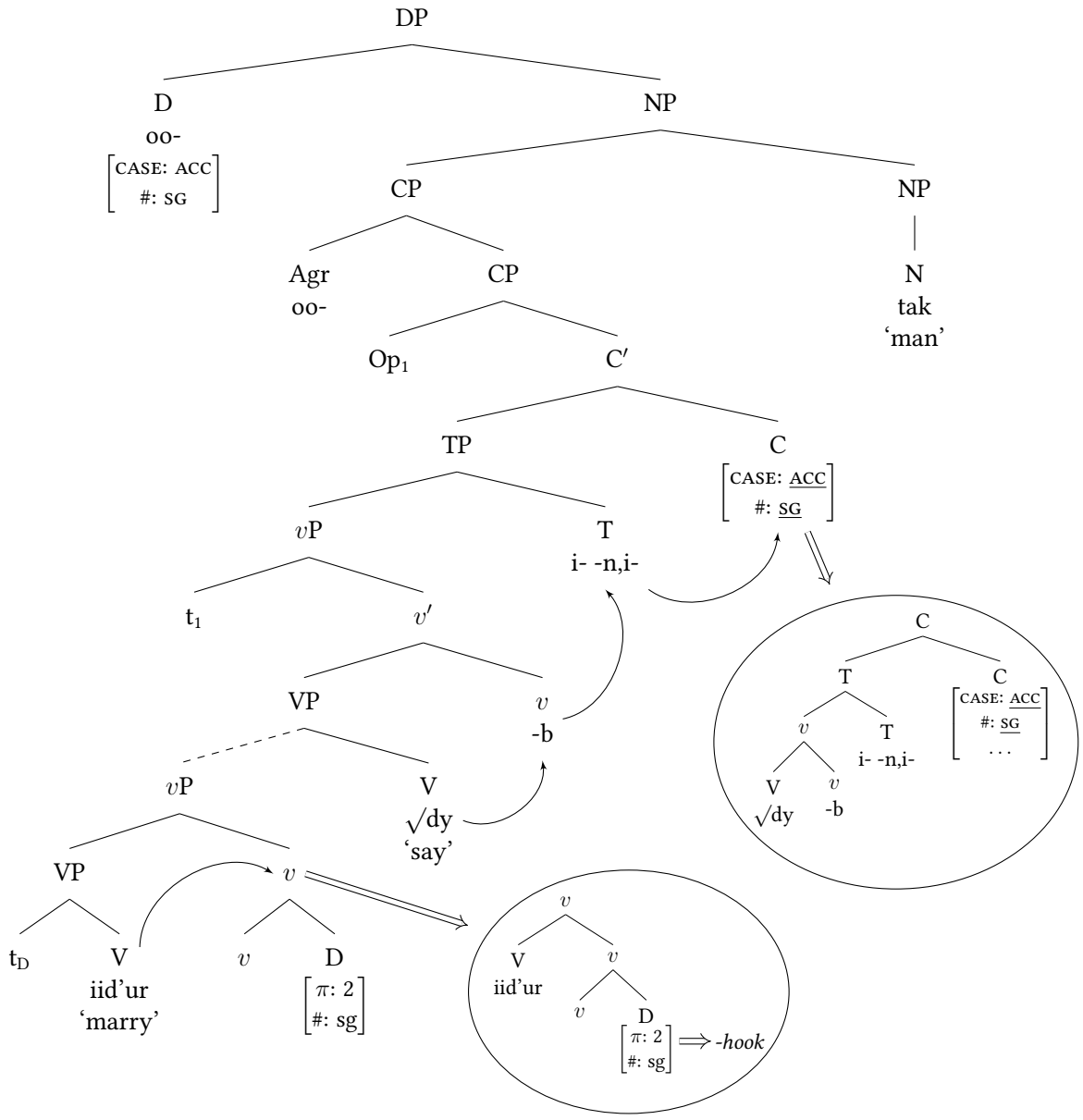
[DP oo-	tak	[CP oo-	i-	√d'r	-ook	]]	akteen
DEF.MSG.ACC-	man	DEF.ACC.MSG-	3MSG-	marry	-you$_{ACC.SG}$		know.1SG

'I know the man who married you.'

It therefore seems that the presence of a periphrastic construction inside the relative clause bleeds allomorphic conditioning of the object suffix by the head noun. On our analysis, where allomorphic conditioning is contingent on the head hosting the object suffix being in the same complex head domain as the C head bearing the relevant case and number features, the breakdown of allomorphic conditioning in (39) can be accounted for.

To see this, consider the structure for (39) in (41).

(41)



The object suffix adjoins to the v associated with the main verb 'marry'. We remain agnostic about how much structure is contained in the non-finite portion of this periphrastic construction. We have represented it here as a vP, but it could be as large as a TP (e.g. to account for the tense/agreement marking we find in 1st person plural). The lexical verb head-moves through its extended projection,

but no higher than 'say' which moves via T to C. As can be seen in (41), the result is that two distinct complex heads are formed. The lower one contains the object suffix and the lexical verb, the other is the higher auxiliary and the relative C head. The object suffix is not contained within the same complex head domain as the C head bearing the accusative and singular feature. For this reason, the contextual specification for the rule inserting *-ook* in (37a) is not met. Instead, the default realization of second singular as *-hook* via the rule in (37e) will apply. This effect of periphrasis is entirely predicted on an account in which what appears to be long-distance conditioning by the head noun of the relative clause is actually a much more local relation with the head of the relative CP. If this were genuine long-distance allomorphy, the prohibitive effect of periphrasis would be more puzzling.

4.2.2 Periphrastic negative past

A similar effect of periphrasis on the apparent long-distance conditioning of object suffix forms can be seen with negation. In matrix clauses, negation is typically expressed by a prefix *ka-* on the main verb. In the negative present, for example, we find this prefix in addition to the object suffix *-hook* on the verb (42). This is the Elsewhere form that we saw with the periphrastic future.

(42) *Ani karhanhook*

ani	ka-	rh	-an	-hook
1SG	NEG-	see	-1SG	-you

'I don't see you'

In the negative past, however, a periphrastic construction is used. In (43), negation surfaces on a form of the copula verb $\sqrt{ky}$ ('be'), while the verb takes a participle form ending in *-aa*.

(43) *Ani rhaayook kaaki*

ani	rh	-aa	-ook	ka-	a-	√ky
1SG	see	-PTCP	-you$_{\text{ACC.SG}}$	NEG-	1SG-	be

'I didn't see you'

What is particularly striking here is that the object suffix takes a different form than in the synthetic negative present (42). In (43), we see the same form that we find in relative clauses whose head noun is an accusative object (*-ook*). A closer look at the syntax of the copula construction allows to understand why this is.

First, consider the fact that the predicate position of a copula verb in Bidhaawyeet always bears overt accusative case. This can be seen in the examples in (44). In (44a), the predicate nominal 'guest' bears the overt accusative marker *-b* that we saw in section 3.1 (here, the copula surfaces as a clitic; see section 6.3 for further discussion). This implies that accusative case is being assigned to the predicate position of the copula. Furthermore, predicative adjectives such as 'tall' in (44b) are also marked with *-b* if the subject is masculine (feminine subjects trigger *-t*). We assume that there is a process of concord between the subject and predicate of a copula verb similar to what we described in section 3.2.

(44) a. *Ani amnaabu*

ani	amna	-b	=u
1SG	guest	-ACC	=be.1SG

'I am a guest.'

b. *Uutak ragaagaabu*

uu-	tak	ragaaga	-b	=u
DEF.NOM.MSG	man	tall	-ACC	=be.3MSG

'The man is tall.'

Importantly, the fact that the predicate position of the copula is associated with overt accusative case somewhat demystifies the fact that we find the accusative singular allomorph in the negative past (43), as this periphrastic construction is built off the copula.

We can see further support for this by zooming in on the structure of the participle in (43). Recall that the lexical verb in the negative past bears the suffix *-aa* which we glossed as a participial suffix (-PTCP). Elsewhere in the grammar, this suffix is clearly used to derive deverbal adjectives. For example, consider the verb *dayyar* ('be tired') in its perfective form in (45a). If we add the suffix *-aa*, we derive an adjectival participle that can be used in a copula construction (45b).[17] Again, we find the suffix *-b*, which is indicative of the adjective bearing accusative case.

(45) a. *Dayyaran*
dayyar -an
be.tired -PFV.1SG
'I have grown tired.'

b. *Ani dayyaraabu*
ani dayyar -aa -b =u
1SG be.tired -PTCP -ACC =be.1SG
'I am tired.'

One might then wonder why we do not see the accusative suffix *-b* in (43). The reason for this is straightforward: There is a general constraint in the language that the accusative suffix *-b* may not co-occur with the object suffix. This is not the case for feminine *-t*, however (34). As we have already seen, there are no third person forms of the object suffixes. When the object is third person, we in fact do see the accusative *-b* suffix on the participle (46).

(46) *Ani rhaab kaaki*
ani rh -aa -b ka- a- √ky
1SG see -PTCP -ACC NEG- 1SG- be
'I didn't see him/her/them.'

This further supports our claim that the participle in the negative past, by virtue of being a deverbal adjective is assigned accusative case. This then accounts for the apparent unexpected appearance of a case-conditioned form in (43).

In terms of analyzing the periphrastic negative past, we adopt a structure similar to adjectival participles in Germanic (e.g. Alexiadou et al. 2015). The structure we assume for (43) is given below in (47). The AP headed by *-aa* attaches to a vP that contains a verb hosting the object suffix. This entire AP is assigned acccusative case as it occupies the predicate position of the copula. We assume that all functional projections in the language bear an inherent singular number feature (we will see further motivation for this from clauses in section 6). Finally, following Bruening (2014), we assume that there is null operator movement that leads to a derived predicate.

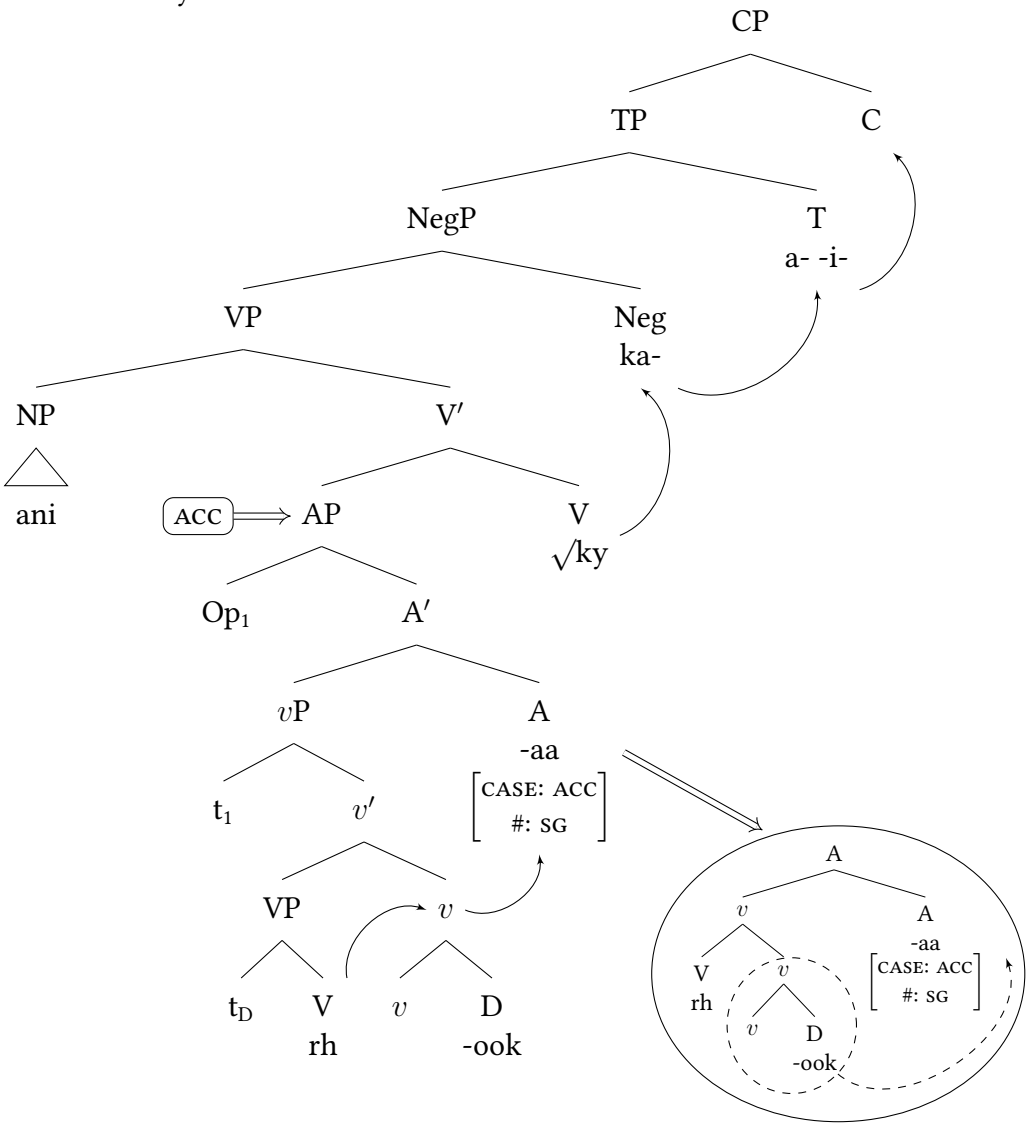
[17] This deverbal adjective can also be used to express perfect aspect more generally (i).

(i) *Oomeek ribiyaawwa*
oo- meek √rby -aa -b =wa
DEF.ACC.MSG- donkey load -PTCP -ACC =be.2MSG
'You've loaded the donkey.'

(47) *Ani rhaayook kaaki*

ani	rh	-aa	-ook	ka-	a-	√ky
1SG	see	-PTCP	-you$_{\text{ACC.SG}}$	NEG-	1SG-	be

'I didn't see you'



The result of this derivation is the formation of two complex heads, one corresponding to the adjectival participle containing the object suffix and another resulting from the copula moving to C. If we consider the lower complex head, it clear that the rule we posited in (37a), repeated below as (48), will also apply here. For this reason, the accusative singular form *-ook* is licensed internal to the structure associated with the participle.

(48) $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-ook* / $[\,[\ldots\ \_\_\ \ldots]\ \overset{\text{X}}{\left[\begin{smallmatrix}\text{CASE: ACC}\\ \text{\#: SG}\end{smallmatrix}\right]}\,]_{\text{X}^0}$

We can now also see one of the reasons for the category-neutrality of the c-commanding head in our rules. In non-periphrastic constructions inside relatives, the C head was the conditioner. In the periphrastic negative past, the A head that forms the participle also bears the relevant features to trigger insertion of the accusative singular allomorph.

Now we can return to the crucial issue of the effect of periphrasis in blocking external allomorphic conditioning in relative clauses. Given the structure in (47), it is clear what we predict. The verb that hosts the object suffix (the participle) is blocked from moving to C by the presence of a higher verb in this periphrastic construction. On the analysis we have proposed, we would expect external conditioning by the head of the relative clause to fail if the relative clause contains the negative past, as it cannot reach the C head where the relevant features reside. As we can see in (49), this prediction is borne out. In (49a), the noun modified by the relative clause is a singular subject and should therefore trigger the corresponding allomorph *-uuk*. We see a mismatch here though, as the object suffix still surfaces in its accusative singular form. As we might expect, an object suffix in a relative clause modifying an accusative singular noun still appears in the accusative singular form (49b).

(49) a. *Uutak uurhaayook baakaay ikteenheeb*

[$_{DP}$ uu- tak [$_{CP}$ uu- [$_{AP}$ rh -aa -ook] baa- √ky
DEF.NOM.MSG- man DEF.NOM.MSG- see -PTCP -you$_{ACC.SG}$ NEG- be
-aa-]] ikteen -heeb
-NEG.CVB- know.3MSG -me
'The man who didn't see you knows me.'

b. *Ootak oorhaayook baakaay kaakan*

[$_{DP}$ oo- tak [$_{CP}$ oo- [$_{AP}$ rh -aa -ook] baa- √ky
DEF.ACC.MSG- man DEF.ACC.MSG- see -PTCP -you$_{ACC.SG}$ NEG- be
-aa-]] ka- akan
-NEG.CVB- NEG- know.1SG
'I don't know the man who didn't see you.'

What we then see is a neutralization of the conditioning effect.[18] Once the relative clause contains the negative past, the features of the head noun become irrelevant to determining the form of the object suffix. Given the structure we have proposed (47), this makes sense because it will always be the closer features on A that are responsible for determining the form of the object suffix.

Furthermore, recall that, unlike the negative past, the negative present is expressed synthetically. The structure for (42) is given below in (50).

[18]There are other constructions that are similar in this regard. For example, there is a construction formed with the verb √rb ('refuse') and what Roper (1928: 82) calls a 'verbal noun ending in *-at*' (also see Ahmed & Vanhove 2002). We gloss this suffix as the desiderative (-DES). In this construction, we also see the accusative singular forms in matrix clauses (i).

(i) *Tukantuurtuuk diwseetu tirib*

Tuu- kantuur -t -uuk diw-s -eet -oo ti- √rb
DEF.NOM.FSG- snoring -F -your$_{NOM.SG}$ sleep-CAUS -DES -me$_{ACC.SG}$ 3FSG- refuse
'Your snoring wouldn't let me sleep.'

As can be seen in (ii), in a conditional clause which usually conditions the nominative singular form of an object suffix, this construction has the accusative singular form of the object suffix, indicating a form of blocking similar to that which we see for the periphrastic negative past.Here, we would also assume that the the case features are locally available on the lower verb (here: *ee* 'come'), which also does not move to C.

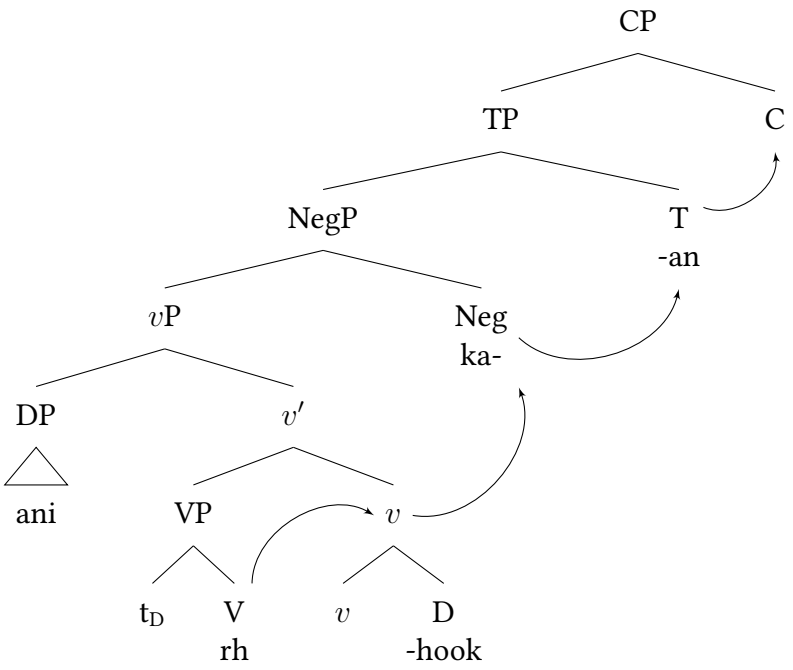
(ii) *Shaawi eetoon tirbeek, n'alla gwirhaab kitbaruwa.*

[$_{CP}$ shaawi ee -ta -oon ti- √rb -eek] n'alla gwirhaa -b
again come -PFV.2MSG -us$_{ACC.SG}$ 2MSG- refuse -if God-willing problem -ACC
kit- √bry -a
NEG.PRES.2MSG- have -NEG.PRES.2MSG
'If you haven't come to see us again (≈ given that you have not come to see us again), hopefully you have no problem.'

(50) *Ani karhanhook*

ani	ka-	rh	-an	-hook
I	NEG-	see	-1SG	-you

'I don't see you'



In this case, the verb hosting the object suffix has does move all the way up to C. For this reason, we predict that external conditioning by the features of the head noun should reappear in this non-periphrastic construction. As (51) shows, this expectation is also confirmed by the data (Notice here that the form of negation is *baa-* rather than *ka-*. We will come back to this in section 6.2).

(51) a. *Uutak uubaarhaayuuk ikteenheeb*

[DP uu-	tak	[CP uu-	baa-	rh	-aay	-uuk	]] ikteen
DEF.NOM.MSG-	man	DEF.NOM.MSG-	NEG-	see	-NEG.CVB	-you$_{\text{NOM.SG}}$	know.3MSG

-heeb

-me

'The man who doesn't see you knows me.'

b. *Ootak oobaarhaayook akteen*

[DP oo-	tak	[CP oo-	baa-	rh	-aay	-ook	]] akteen
DEF.ACC.MSG-	man	DEF.ACC.MSG-	NEG-	see	-NEG.CVB	-you$_{\text{ACC.SG}}$	know.1SG

'I know the man who doesn't see you.'

Overall, these observations follow relatively straightforwardly if the apparent long-distance allomorphy of object suffixes is actually local allomorphy triggered within the same complex head domain. The negative past shows the same prohibition as the future tense, but in a slightly different way. In both periphrastic constructions, the relevant features that reside on the head of relative C are not reachable by head movement and may therefore play no role in determining the choice of form for the object suffix. In the case of the future, there are simply no other features visible and, as such, we revert to the Elsewhere form. With the negative past, the features of the participle will always be local and the effect of long-distance allomorphy is neutralized.

4.3 Further issues

4.3.1 Subanalyzing the paradigm

One possible objection to the analysis we have proposed so far is that the forms we are analyzing show clear sub-regularities that seem to motivate further morphological decomposition. For example, all the accusative singular forms, e.g. *-oo*, *-ook*, *-oon*, share a vocalic core that happens to be the same as the definite accusative singular determiner *(t)oo-*. It is therefore not unreasonable to consider the alternative morphological analysis in (52).

(52)

	ACC.SG			ACC.PL			NOM.SG			NOM.PL		
	I	II	III	I	II	III	I	II	III	I	II	III
1SG	h-	ee	-b		oo			ee			uu			ii	
1PL	h-	oo	-n		oo	-n		ee	-n		uu	-n		aa	-n
2SG	h-	oo	-k		oo	-k		ee	-k		uu	-k		aa	-k
2PL	h-	oo	-kna		oo	-kna		ee	-kna		uu	-kna		aa	-kna

Here, we can identify three morphological 'slots' or 'positions' that would each be governed by their own set of realization rules. Position III is relatively straightforward to capture, as it mostly seems to encode the person/number features of the pronoun. Here, we could adopt the rules in (53).[19]

(53) *Realization rules for position III*

a. [1PL] ⟶ *-n*
b. [2SG] ⟶ *-k*
c. [2PL] ⟶ *-kna*
d. [1SG] ⟶ *-Ø* / [CASE: α]
e. [(1SG)] ⟶ *-b*

The complication here is the 1st person singular. There is an overt suffix *-b* for 1st singular only in environments that we have analyzed as lacking a locally available allomorphic trigger (i.e. root clauses, periphrastic future). We therefore seem forced to treat *-b* as a context-free Elsewhere (1sg) form (53e) which is blocked by a more specific zero exponent such as (53d) whenever there is an accessible valued case feature [CASE: α] (where α can stand for NOM or ACC).

The same consideration applies to position I. In order to treat, *h-* as the Elsewhere case, it must be blocked whenever there is accessible trigger bearing a valued case feature, as per the rules in (54).

(54) *Realization rules for position I*

a. [ ] ⟶ *Ø-* / [CASE: α]
b. [ ] ⟶ *h-*

A serious challenge now arises in tackling position II. Given the subanalysis in (52), we arrive at two non-natural distributions for the morphemes *oo* and *ee* (they cannot each be defined with reference to a single set of feature values). It is also difficult to treat one of them as a radically underspecified form, as both appear in the supposed Elsewhere context (the first column). In practice, either *ee* or *oo* must count as the Elsewhere form. Since it has a wider distribution, we could take *oo* to be the Elsewhere form (55e) and specify *ee* for insertion in the context of accusative plural features (55c). The other forms (*uu*, *aa* and *ii*) are conditioned by other case and number combinations (with *ii* being

[19] One could treat *-k* as a general second person morpheme (underspecified for number) and *-na* as a second plural form that can be inserted in addition to *-k* (extended exponence). However, we refrain from doing so here.

more specific in also realizing 1st singular features).

(55) *Possible realization rules for position II*

a. [π: 1, #: SG] ⟶ *ii* / [CASE: NOM, #: PL]
b. [ ] ⟶ *aa* / [CASE: NOM, #: PL]
c. [ ] ⟶ *ee* / [CASE: ACC, #: PL]
d. [ ] ⟶ *uu* / [CASE: NOM, #: SG]
e. [ ] ⟶ *oo*

As a consequence of these rules, *oo* would be inserted in both accusative singular and truly caseless contexts. The challenge is now why we find *ee* in 1sg singular caseless contexts, too. Given the rules in (55c), this is not what we would expect. The non-natural class carved out by *ee* cannot be captured without recourse to morphomic features (Trommer 2016) or some arbitrary feature-changing rules. The same problem holds *mutatis mutandis* if we treat *ee* as the Elsewhere form.[20] These issues can potentially be overcome by treating the *h*-forms as irregular, i.e. with the assumption that the stem is *hee/hoo* in such contexts. However, this undermines the main argument for this segmentation in the first place, namely that it misses some obvious subregularities in the paradigm.

For these reasons, we contend that the object suffix forms should in fact not be morphologically sub-analyzed in the sychronic grammar. While there are clearly generalizations that are missed by doing this, we believe that these are best understood diachronically. As we have already mentioned, the forms seem to be broadly decomposable into a form identical to the definite determiner and a regular suffix encoding the person and number features of the object (with the some degree of irregularity regarding the *h*-initial forms and the 1st singular row). This final suffix shows a striking similarity to the pronoun forms found across Afroasiatic. As the table in (56) shows, we find very similar forms in the related languages Blin (Appleyard 2007: 491), Akkadian (von Soden 1995: 53–54), Gəʿz (Tropper & Hasselbach-Andee 2021: 52), Somali (Green 2021: 264) and Afar (Kamil 2015: 228) (a similar pattern holds in Saaho, not listed below; see Tajebe 2015: 143). These cognates can be found in nearly all branches of Semitic and all reconstructions of Proto-Semitic, and in the reconstructed forms of Egyptian suffix pronouns (Loprieno 1995, Allen 2013). Less obvious links occur in Chadic and Berber.

(56)

	Bidhaawyeet	Afar	Somali	Blin	Akkadian	Gəʿz
1SG	-VV-Ø	yoo	i	-lä	-ya	-yä
1PL	-VV-**n**	**n**ee	**n**a (EXCL)	-**n**a	-**n**i	-**n**ä
2SG	-VV-**k**	**k**oo	**k**u	-**k**a	-**k**a (M)/-**k**i (F)	-**k**ä (M)/-**k**i (F)
2PL	-VV-**kn**a	si**n**	idi**n**	-**km**	-**kn**u (M)/-**kin**a (F)	-**kem**u

For this reason, we believe that the final part of the Bidhaawyeet object suffix was, at some point in the history of the language, an independent pronoun that occurred together with the definite determiner, but this has since been grammaticalized into an object suffix on verbs that may optionally double an overt pronominal argument. The various idiosyncrasies we find with the *h*-forms and in the first singular will have arisen in the course of this grammaticalization process.

Overall, it is not clear how much is actually gained from decomposing the object suffix forms. Doing so is prohibitive to treating these forms as conditioned purely by case and number (something that we will continue to argue for based on the wider distribution of the forms). Furthermore, it does not avoid the issue of long-distance allomorphy, as accounting for the vocalic part of the suffix in

[20]It is also worth noting that a solution cannot involve changing the case specifications of the contexts involved. Doing so, would predict the unwanted appearance/disappearance of *h*- in slot I whenever case features are absent.

position II will still require access the features of the head noun. For this reason, we do not believe that it is either useful or necessary to decompose these forms in a synchronic analysis.

4.3.2 Alternative views on the locality of allomorphy

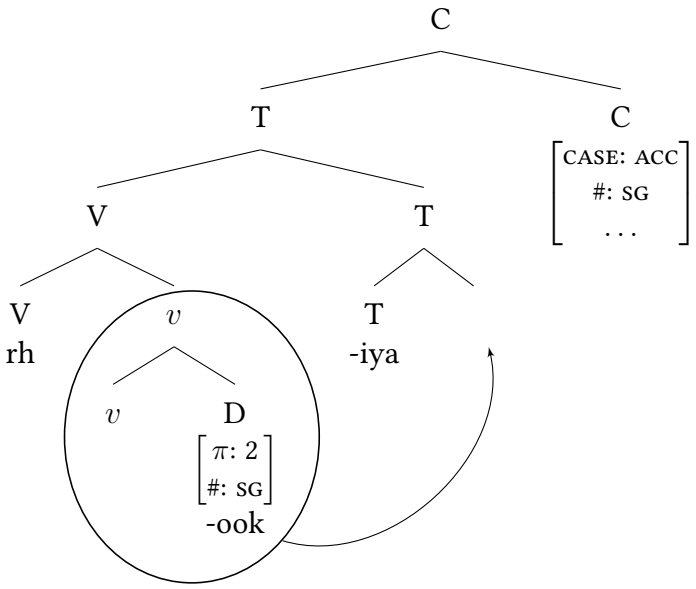
So far, we have shown that apparent long-distance allomorphy in Bidhaawyeet relative clauses is compatible with the locality condition proposed in Bobaljik (2012) and Bobaljik & Harley (2017), where the target and trigger must be within the same complex head domain or on the sister of that complex head. In this section, we will briefly comment on alternative views of the locality conditions on allomorphic conditioning and the extent to which our proposal is also compatible with them.

Consider again example (16a), repeated below. Here, we have only included the structure of the complex head that corresponds to the verb in the relative clause. Recall that we have proposed that the v complex is adjoined to T due to a morphotactic constraint against the finality of T in its own maximal projection (see footnote 7).

(57) *Ootak iru rhiyanook akteen*

[$_{DP}$ oo-		tak	[$_{CP}$ iru		rh	-iya	-ook	]] akteen
DEF.ACC.MSG-	man		yesterday	saw		-3MSG	-you$_{ACC.SG}$	know.1SG

'I know the man who saw you (sg.) yesterday.'



On Bobaljik & Harley's (2017) definition of locality, the target of allomorphy (D) and the trigger (C) are sufficiently local for conditioning of the ACC SG form *-ook* to be possible, as they are contained within the same maximal complex head. There have been other proposals about the locality domains for allomorphy, however. Embick (2010) argues that allomorphic relations may only hold between linearly adjacent nodes (Merchant 2015 dubs this the *Node Adjacency Hypothesis*). In other words, when the complex head in (57) is translated into a linearized string of terminals, only two linearly concatenated nodes X⌢Y may participate in allomorphic conditioning. Given the fact that we assume that there is a morphotactic repair that adjoins the complex v constituent to T, this word order change will also be reflected in the linearization. The linearization of (57) would therefore be as in (58). Here, the D head is in fact directly concatenated with its allomorphic trigger C and, as such, this view of allomorphy is also broadly compatible with our analysis.

(58)

V	⌒	T	⌒	v	⌒	D	⌒	C
rh		-iya				-ook		[CASE: ACC, #: SG]

Another perespective on locality domains for allomorphy assumes that realization rules may be 'hyper-contextual', i.e. that they may mention a sequence of heads in their contextual specification. In essence, the rules we have formulated which contain a contextual specification like 'if c-commanded by X within the same complex head' would qualify as hyper-contextual, as they abstract over any number of potential intervening heads within the same complex head domain. Moskal & Smith (2016: 296) propose that 'VI-rules can make reference to anything [...] as long as the trigger is accessible, which is defined by cyclic locality'. Their definition of locality, however, adopts the proposal in Moskal (2015) that the delimiting domain for hyper-contextual rules involves an 'Accessibility Domain' that extends to one projection above the local cyclic node/phase head. In the structure in (57), this would not work (either before or after morphotactic displacement) since the Accessibility Domain would be maximally $T^{0^{max}}$ (assuming that v is the cyclic head; see Ganenkov 2020 for a similar conclusion). We will return to the need for hyper-contextuality in realization rules in our discussion of copula forms in section 6.3.

5 Allomorphy in possessive pronouns

Now, let us turn to possessive pronoun forms in the nominal domain. As was already briefly mentioned in section 2, the forms of the object suffix overlap with those of the pronominal suffixes used to mark possession in the noun phrase. On our proposal that these forms are allomorphs of an incorporated object pronoun, we can provide a unified account of both the object marking and possessor uses of these suffixes.

To see this, consider that the various of a second singular possessor are conditioned by the case and number of the possessed noun (59).[21]

(59) a. *Tukwaatuuk rhitaheeb*

[DP tuu- kwaa -t **-uuk**] rh -ta -heeb
DEF.NOM.FSG- sister -F **-your$_{\text{NOM.SG}}$** see -3FSG.PFV -me
'Your sister saw me.'

b. *Amsi tugahwaatook shagasaab kittaa*

amsi [DP too- gahwaa -t **-ook**] shaga-s -aa -b ki-
today DEF.ACC.FSG- café -F **-your$_{\text{ACC.SG}}$** work-CAUS -PTCP -ACC NEG-
t- √ky -aa
2SG- be -2MSG
'You didn't operate your café today.'

[21] It is important to note that, unlike what we have seen with object suffixes, it is not possible to have a full phrasal pronoun in addition to a possessive suffix. An example such as (59a) can alternatively be expressed as (i). In such cases, the noun may not take the possessive marker *-uuk* (in addition to the concomitant gender marking *-t* and blocking of opening syllable shortening) in the presence of the phrasal possessor *barituuk*.

(i) *Barituuk tuukwa(*a-t-uuk) rhitaheeb*

[DP barituuk tuu- kwaa] rh -ta -heeb
your.NOM.FSG DEF.NOM.FSG- sister see -3FSG.PFV -me
'Your sister saw me.'

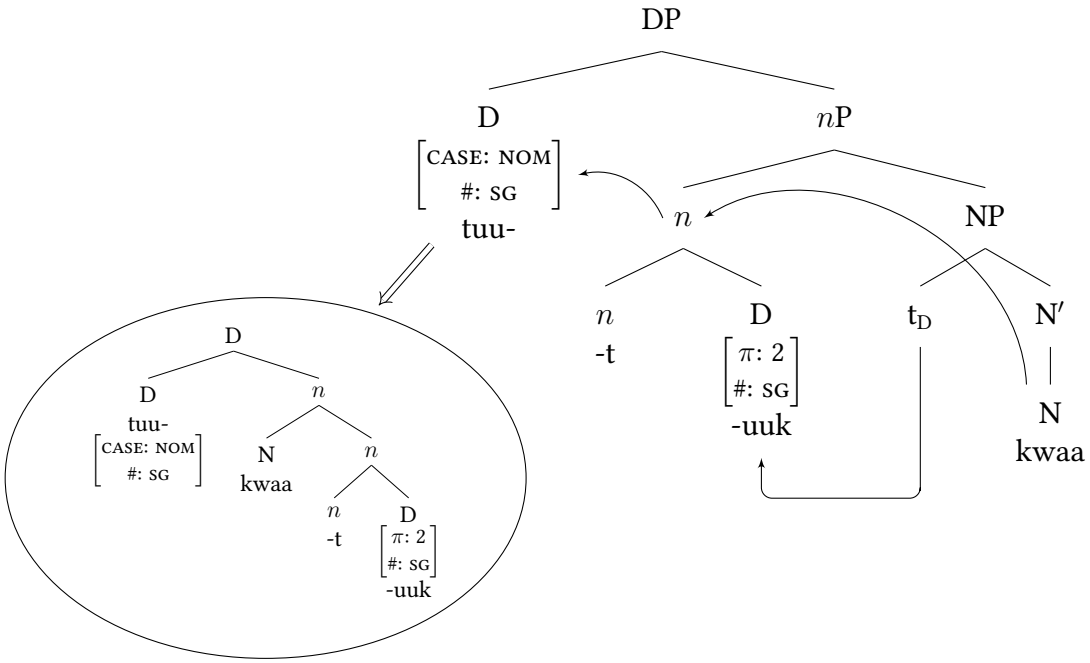
In the present account approach to clitic doubling, this restriction would require a stipulation that a 'big DP' may not be generated in possessor positions.

c. *Ishagwyeekna baakaay, ani gwirhaab kaabaru*

[$_{DP}$ ee- shagwii -eekna] baa- √ky -aa- ani gwirhaa
DEF.ACC.3MPL- absence -your$_{ACC.PL}$ NEG- be -NEG.CONV- 1SG problem
-b ka- a- √bar -u
-ACC NEG- 1SG- have -NEG.PRES
'Except for your absence, I have no problem.'

Given what we have assumed so far, we can provide a straightforward analysis of this. Our proposal for the internal structure of the DP is given below in (60), where the D head realizing the possessive suffix incorporates from possessor position into the complex head formed by head movement to D.

(60)



Within the complex head formed by the operations in (60), the possessive suffix is c-commanded by another head bearing case and number features within the same complex head domain. For this reason, we can again use the rule in (37b), repeated below as (61).

(61) $[\pi\text{: 2, \#: SG}] \longrightarrow$ *-uuk* / $[\,[\ldots\ \_\_\ \ldots]\ \begin{bmatrix}\text{CASE: NOM}\\ \text{\#: SG}\end{bmatrix}\,]_{X^0}$ (X)

Since the category of the head is underspecified, the trigger for allomorphy will be D in this case. We have now seen three distinct kinds of heads that X can stand for: the C head of a relative clause, the A head of an adjectival participle and now the head of DP.

It is important to note that the range of forms used in the possessive is slightly larger than with object suffix. In particular, possessive suffixes show third person forms that we do not find with object suffixes. This can be seen with the suffix *-ooh* in (62), for example.

(62) *Afa oogawooh rhan*

afa oo- gaw -ooh rh -an
last.night DEF.MSG.ACC- house -his$_{ACC.SG}$ see -PFV.1SG
'I saw his house last night.'

For this reason, we expand the paradigm of relevant forms to include this additional row in (63). The *h*-initial forms found in matrix clauses are never found as possessive markers, which is to be expected if these are caseless/Elsewhere forms, since DPs must always bear case (even in contexts where case is not obviously assigned, the accusative functions as a ‘ Default Case’; see Schütze 2001).

(63)

		Head of relative clause/ Head of possessive noun phrase			
		ACC.SG	ACC.PL	NOM.SG	NOM.PL
1SG	-heeb	-oo	-ee	-uu	-ii
1PL	-hoon	-oon	-een	-uun	-aan
2SG	-hook	-ook	-eek	-uuk	-aak
2PL	-hookna	-ookna	-eekna	-uukna	-aakna
3SG/PL	—	-ooh	-eeh	-uuh	-aah

shaded cells: object suffix forms, boxed cells: possessive suffix forms

At this point, one might wonder why third person forms are not also possible with object suffixes. In the absence of any deeper explanation, we assume that there is a morphological process that deletes a D head with 3rd person features that is adjoined to v. This could be viewed as an *Obliteration* rule, for example, that deletes the entire D node prior to insertion of any forms (see Arregi & Nevins 2012).

6 Allomorphy conditioned by clause type

Up to this point, we have shown that the various forms of object suffixes that we find in Bidhaawyeet involve local allomorphy for case and number. This also extends rather straightforwardly to the additional use of the same forms to mark possession within the noun phrase. There is, however, another aspect of the distribution of these forms that appears to be sensitive to clause type. In this section, we will address this issue and argue that it is still possible to maintain our proposal even in light of these data. We will then go on to present two further instances of apparent clause type-conditioned allomorphy with negation and the copula and show how the apparent matrix/non-matrix distinction can also be reduced to case.

6.1 Subordinate clauses

Recall that we analyzed the various *h*-initial forms of the object suffix, such as *-hook* in (64), as Elsewhere forms that are inserted in contexts where there are no locally accessible case and number features within the same morphosyntactic word.

(64) *Ani rhanihook*

ani	rh -ani		-hook
1SG	see -PRES.1SG		-you

‘I see you.’

Against this background, it is perhaps somewhat surprising to discover that we do not find these forms in a variety of subordinate clauses. In complement clause types. For example, we find the same forms that we did in relative clauses modifying a singular object, namely *-ook* (65).[22]

[22]We have found relatively few examples of genuine clausal complementation such as (65). In many cases, the complement of the embedding verb clearly has the structure of a relative clause:

(65) *Baruuh wharru ihiyook hiisiyaan*

[$_{CP}$ baruuh	oo-	harroo	i-	√hy	-ook	]	hiis	-iyaan
he	DEF.ACC.MSG-	sorghum	3MSG-	give	-you$_{ACC.SG}$		think	-PFV.3PL

They thought that he gave you the sorghum.

Interestingly, these same 'accusative singular' forms are found in temporal adverbial clauses. In (66a), the adverbial clause is headed by the suffixal subordinator *-hoob*. The object suffix here takes the accusative singular allomorph *-ook*. This same is true for adverbial clauses with *ka* ('whenever') (66b).

(66) a. *Ani rhanookehoob giigan*

[$_{CP}$ ani	rh -an	-ook	-hoob]	giig	-an
I	see -PFV.1SG	-you$_{ACC.SG}$	-when	leave	-PFV.1SG

'When I saw you, I left.'

b. *Ani rhaniyook ka giigani*

[$_{CP}$ ani	rh -ani	-ook	ka	]	giig	-ani
I	see -PRES.1SG	-you$_{ACC.SG}$	whenever		leave	-PRES.1SG

'Whenever I see you, I leave.'

Moreover, in conditional clauses, we find the same object suffix forms that we did in relative clauses modifying a nominative singular noun. In general, conditional clauses are marked by the suffix *-eek*. This suffix may not co-occur with object clitics, however. If the conditional clause contains an object suffix, *-eek* is dropped and the object suffix takes its nominative singular allomorph.[23] For a second singular object, this is *-uuk* (67b). This can also be seen for the first person plural in (67c).

(i) *Baruuh wharru ihiyeetook toona ikanna*

[$_{DP}$ [$_{CP}$ baruuh	oo-	harroo	i-	√hy	-t	-ook	]	too-	na	]	ikanna
he	DEF.ACC.MGS-	sorghum	3MSG-	give	-F	-you$_{ACC.SG}$		DEF.ACC.FSG-	thing		know.PFV.3PL

'They found out that he had given you the sorghum.'

Assuming that complementation always involves nominal structure would not change anything substantial about our proposal.

[23] Our description here conflicts somewhat with what is reported in Vanhove (2014: §3.1.8.5). There, it is claimed that nominative singular forms such as *-uuk* are found preceding what she glosses as 'aorist' suffixes. We have glossed such forms as the past imperfective in our examples. In general, the past imperfective is used in counterfactual conditionals, while it is used for describing an ongoing state of affairs in narratives. We suspect that the frequent occurrence of the imperfective in conditionals has led to the claim that it is the aorist (imperfective) that triggers nominative forms rather than the conditional clause itself, as we claim. In support of this view, there are examples in Vanhove's sketch and corpus that show *h*-initial Elsewhere forms co-occurring with aorist/imperfective inflection on the verb, which would unexpected if aorist were the trigger for nominative singular 'U-forms'. (i) is one such example.

(i) *W'oor hiisihook*

oo-	oor	hiis	-i	-hook
DEF.ACC.MSG-	boy	think	-IPFV.1SG	-you

'I thought you were the boy.'

For this reason, we feel confident in our claim that the nominative singular forms are triggered by conditional clauses rather than any particular tense or mood.

(67) a. *Eefaayeek, ba'eeyaayi*
[$_{CP}$ ee- √fy -eek] ba- ee- -i
3MSG- be -COND OPT- come -OPT.3MSG
'If he's there, he should come.'

b. *Rhaniyuuk, giigi andi*
[$_{CP}$ rh -ani **-uuk / -you$_{NOM.SG}$**] giig -i a- √dy -n-
see -PRES.1SG leave -FUT 1SG- say -PRES.SG-
'If I see you, I'll leave.'

c. *Deem Arab eetiit bit'eeyayuun, nimuuyahook neeyad*
[$_{CP}$ Deem Arab ee- -ti -t bit- ee- **-uun / -us$_{NOM.SG}$**]
Deem Arab come -PFV.PTCP -and NEG.PFV.2MSG- come
ni- √mooy -uu- -hook nee- √dy
FUT.1PL- blame -FUT- -you PRES.1PL- say
'If you come to Deem Arab and don't come to us, we'll blame you.'

The full distribution of the object suffix allomorphs can therefore be summarized in (68). The object suffix forms appear to have two distinct conditioning environments: the case and number of the head of the relative clause or clause type. Alongside the matrix/non-matrix disinction, there a split between subordinate clauses. Temporal adverbials and complement clauses contain the same forms that we have associated with accusative singular features, while conditionals trigger the nominative singular forms.

(68)

	Head of relative clause/ Head of possessive noun phrase				
		ACC.SG	ACC.PL	NOM.SG	NOM.PL
clause type	matrix	temporal adverbial / complement clause	conditional		
1SG	-heeb	-oo	-ee	-uu	-ii
1PL	-hoon	-oon	-een	-uun	-aan
2SG	-hook	-ook	-eek	-uuk	-aak
2PL	-hookna	-ookna	-eekna	-uukna	-aakna
3SG/PL	—	-ooh	-eeh	-uuh	-aah

shaded cells: object suffix forms, boxed cells: possessive suffix forms

In light of this, we will argue that it is possible to pursue a unified account of this distribution where distinctions in clause type actually reduce to case features.

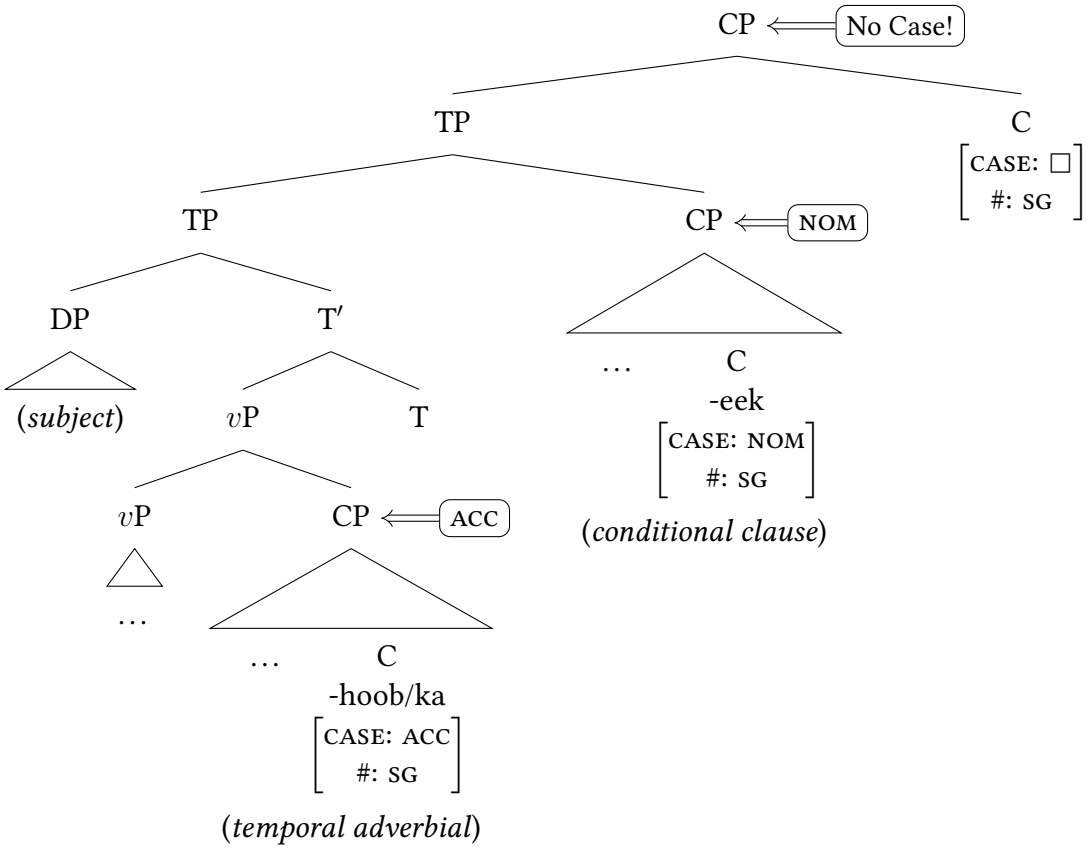
First, it is important to notice that the two subordinate clause contexts align with the singular columns of the paradigm. This is potentially telling if clauses themselves are inherently singular. Recall that we made a similar assumption for adjective phrases in section 4.2.2. If all functional projections in Bidhaawyeet bear inherent singular number, then their alignment with the singular cased forms would provide the first step toward a unification.

The second aspect to be accounted for is why complement clauses and temporal adverbials align with accusative, while conditionals pattern with nominative contexts. The crux of our proposal is that this difference correlates with the structural height of the clause. Both clausal objects and temporal adverbials have in common that they adjoin relatively low in the structure, at least below vP. Conditional clauses, on the other hand, can be assumed to attach at the TP-level by virtue of semantically modifying a proposition (see e.g. Jackendoff 1972, Pollock 1997, Ernst 2002; and Iatridou

1991 on conditionals).

With this distinction in adjunction height in place, we can try to link this to case. We assume that the CPs in question may be assigned case (despite it not being realized overtly on the clause itself). What we then need to ensure is that clauses situated at the vP-level or lower are assigned accusative, while clauses adjoining higher (to TP) are assigned nominative.[24] This is schematized in (69). Here, we show CPs adjoining to the right for expository purposes. They are quite rigidly linearized to the left of their host clauses, as is particularly common for head-final languages (see e.g. Comrie 1986 on conditionals).

(69)



On this view, structural height maps directly onto distinct case assignments: Low adjuncts are assigned

[24]There are some cases in which it might look like a nominative form is used in a matrix clause. In general, the protasis of a conditional can stand alone with an inferential meaning (ia). In comparable cases, an object suffix replaces *-eek* and still takes the nominative form (ib).

(i) a. *Digaat tikatiyeek*
digaa -t ti- √ky -a,i- -eek
heavy -F 3FSG- be -PRES.SG- -COND
'It seems heavy.'

b. *Been uutak humaagiiniyuuk…*
been uu- tak humaag -iini -uuk
that DEF.NOM.MSG- man hate -PRES.3MSG -you$_{\text{NOM.SG}}$
'That man seems to hate you…'

This construction is a little hard to work with in elicitation, but is encountered in natural speech with some frequency. In reflexive discussion of these occurrences, people tend to feel compelled to complete the conditional construction. For this reason, we assume that, even in apparent stand-alone usage, these constructions are in fact structurally still subordinate clauses in which structural nominative is assigned. This view is further supported by the fact this construction also contains the non-matrix of the copula, for example (see section 6.3).

accusative, high adjuncts are assigned nominative, and root CPs receive no case. There are different ways in one could try to understand this.

One possibility would be to say that there are domain-specific case assignment principles that assign a default/Elsewhere at different portions of the clause, e.g. the Elsewhere case within the vP could be accusative, while nominative is assigned at the TP-level. An alternative would be to adopt the theory of Dependent Case laid out in Baker (2015). In this theory, accusative case is assigned to the lower of two case competitors that stand in an asymmetric c-command relation within a given domain (also see Baker & Vinokurova 2010, Baker 2014, Atlamaz & Baker 2018). For this to work, we could first assume that clauses (and adjuncts more generally) are potential case assignees but not case competitors (Baker 2015: 221). In other words, they participate in only one half of the case calculus in receiving, but not triggering, case assignment. Second, the relevant domain for case assignment is limited to TP. Low adjuncts that adjoin to VP/vP will receive structural accusative by virtue of being c-commanded by the subject. Since conditional clauses originate higher, they will receive the unmarked case, nominative. As they are not case competitors, they do not trigger dependent accusative on the subject.

In support of the idea that case is relevant, it is worth noting that low adverbials show accusative case overtly when they are nominal (70). We are not aware of any nominal adverbs that show overt nominative case.

(70) a. *Oomb'i kassooh talwiiwiya*
[$_{DP}$ oo- (m)b'i kass -ooh] talwiiw -iya
DEF.ACC.MSG- day all -POSS wander -PFV.3MSG
'He wandered all day.'

b. *Daayiib kafiini*
[$_{AP}$ daayi -b] kaf -iini
good -ACC sing -PRES.3MSG
'He sings well.'

Given these assumptions, the root CP will not be assigned any case values. Assuming that it still bears a case feature, however, the case feature of a root CP will remain unvalued. One could also say that root CPs simply lack a case feature altogether, though this would create the need to encode root status as a lexical property (e.g. as [+matrix]), in contradiction to what we are arguing here. Furthermore, we now turn to evidence from two other kinds of clause-type conditioned allomorphy that matrix contexts should in fact not always be treated as the Elsewhere case.

6.2 The form of negation

Let us now consider the form of negation in Bidhaawyeet. We have already seen various examples of the negative prefix, some of which are repeated below in (71). In matrix clauses, we find the form *ka-* attached to the finite verb (71a). In non-matrix clauses, however, this negative prefix takes a different form, namely *baa-*. In (71b), we see both forms simultaneously: the negation inside the relative takes the *b*-form, while the negative prefix on the matrix verb shows the *k*-form. Example (71c) shows that the *b*-form is also found in conditional clauses.

(71) a. *Ani rhaayook kaaki*
ani rh -aa -ook ka- a- √ky
1SG see -PTCP -you$_{ACC.SG}$ NEG- 1SG- be
'I didn't see you'

b. *Ootak oorhaayook baakaay kaakan*

[$_{DP}$ oo- tak [$_{CP}$ oo- rh -aa -ook baa- √ky -aa-
DEF.ACC.MSG- man DEF.ACC.MSG- see -PTCP -you$_{ACC.SG}$ NEG- be -NEG.CVB-
]] ka- akan
NEG- know.1SG

'I don't know the man who didn't see you.'

c. *Daayaraab baakaayeek, it'iwhook*

[$_{CP}$ daayar -aa -b baa- √ky -aa- -eek] it- √'wy -hook
be.tired -PTCP -ACC NEG- be -NEG.CVB- -if IPFV.1S- help -you

'If I weren't tired, I would help you.'

It might be tempting to analyze this matrix vs. non-matrix distinction in a similar way to the distribution of the *h*-forms in the object suffix paradigm, i.e. by treating the matrix form *ka-* as the Elsewhere (72b). The subordinate form *baa-* would then be inserted in the context of any case value, i.e. irrespective of the kind of non-matrix clause it is situated in.

(72) (to be revised)

a. Neg $\longrightarrow$ *baa-* / [[… __ …] $\underset{[\text{CASE: } \alpha]}{\text{X}}$]$_{X^0}$

b. Neg $\longrightarrow$ *ka-*

This is precisely not what we will propose, however. The reason for this is that there are contexts which would be paradoxical on this view, namely those in which we find the putative non-matrix form of negation (*baa-*) occurring with the matrix *h*-form of the object suffix. Examples (71c) and (73) involve an adverbial clause that contains a verb with a suffix that we call the 'negative converb' (Roper (1928: 39, 56, 63) calls this 'negative present participle', while Vanhove (2017: 99–100) calls it a 'negative converb of simultaneity').

(73) *Baasooyaheeb, giigiya*

[$_{XP}$ baa- sooy -ay -heeb] giig -iya
NEG- inform -NEG.CVB -me leave -PFV.3MSG

'He left without telling me.'

The crucial observation here is that negation takes the non-matrix form *baa-*, while the object suffix takes the designated matrix *h*-form. A similar mismatch between the two apparent Elsewhere forms can be seen in negative imperatives such as (74), too.

(74) *Baahatirsamaaheeb!*

baa- hatir-sam -aa -heeb
NEG- argue-RECP -IMP.MSG -me

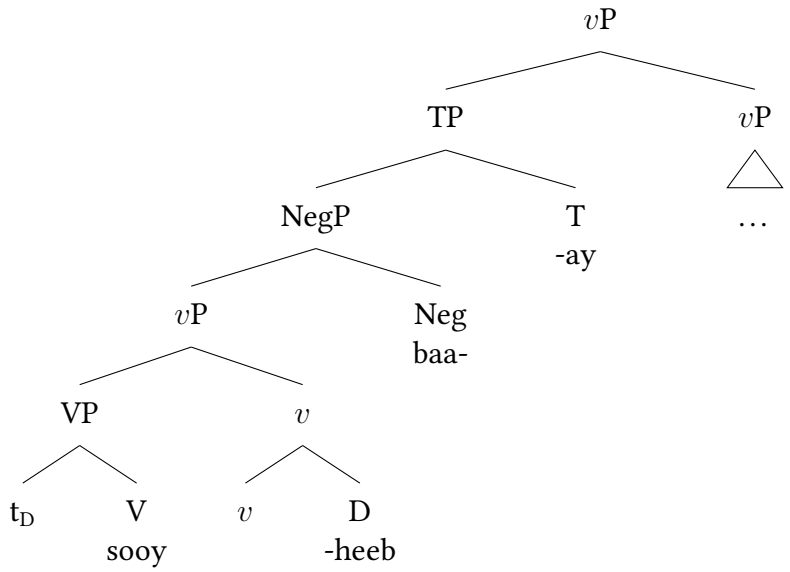
'Don't argue with me!'

We therefore have a conflict. If *b*-negation is conditioned by the presence of a case feature, as the rule in (72a) would have it, then it becomes difficult to explain why this same case feature is not conditioning a corresponding case-sensitive allomorph of the object suffix. It must therefore be that we are wrong in our assumption about the Elsewhere form of either the object suffix or negation.

We will argue, given the fact that the distribution of object suffix forms is otherwise accounted for, that we should rethink the conditioning environment for matrix forms of negation. In particular, we

would like to suggest that the adverbial clause in (73) actually involves a truncated structure that is smaller than a CP. We also tentatively adopt this analysis for negative imperatives such as (74). We then propose that the example in (73) has the structure in (75), where the negative converb *-ay* is a special allomorph of T in the context of negated non-concatenative verbs (though there are other possible analytical options here).

(75)



The important claim here is that, as a result of the reduced clause size, no case is assigned to NegP due to the absence of CP layer, despite the fact it occupies a vP-adjoined position that would usually be assigned accusative. Given this, both of the relevant forms in (74) must be Elsewhere forms. This is in line with what we have already claimed for *h*-initial forms such as *-heeb*, but it requires us to revise our previous assumptions about negation. If *baa-* is the Elsewhere form, then how can we positively specify the realization context for *ka-*, a form which only surfaces in matrix clauses? If root CPs simply lack case features altogether, then this would not help us. In order to have a non-Elsewhere specification for *ka-*, it seems necessary to refer to the *absence of a case value*. We will embrace this consequence here and propose that the realization rule for matrix negation in (76a) makes reference to a null case value, while the embedded *baa-* form is the Elsewhere case (76b).

(76) a. Neg $\longrightarrow$ *ka-* / $[\,[\,\ldots\,\underline{\quad}\,\ldots\,]\,{}^{\mathrm{X}}_{[\textsc{case}:\,\square]}\,]_{\mathrm{X}^0}$

b. Neg $\longrightarrow$ *baa-*

This highlights that it cannot be as straightforward as saying that subordinate forms are always more specific, while matrix forms are the Elsewhere case. This seems correct for object suffixes, but not for negation. In the following section, we will present another instance of clause-type-conditioned allomorphy that further supports this conclusion.

6.3 The form of the copula

Let us consider the form of the copula in Bidhaawayeet. We have already encountered the copula at various points in the course of this paper, but we list the full forms in (77). There are both present and imperfective forms of the non-concatenative root $\sqrt{ky}$ that inflect for agreement with the subject and are irregular to some degree. In addition to this, there are enclitic forms which are invariant for tense.

(77) *Copula forms in Bidhaawyeet*

	√ky (PRES)	√ky (IPFV)	enclitic
1SG	akati	iikti	=u
2MSG	tikatiya	tiikti	=wa
2FSG	tikatii	tiikti(i)	=tuwi
3MSG	ikati	iikti	=u
3FSG	tikati	tiikti	=tu
1PL	nikati	niikti	=a
2PL	tikatiina	tiiktiina	=aana
3PL	ikatiin	iiktiina	=a

Generally speaking, we find the enclitic forms of the copula in matrix clauses. It may attach to adjectival participles (78a), predicative adjectives (78b) or predicate nominals (78c).

(78) a. *Finaayda bisiraabaana?*
finaa -ii(h)-da √bsr -aa- -b =aana
fight -DAT prepare -PTCP- -ACC =be.2PL
'Are you (pl.) ready for a fight?'

b. *Imhala daayiiba*
aa- mhal -a daayii -b =a
DEF.NOM.MPL- two -PL good -ACC =be.3PL
'Both are good.'

c. *Ani amnaabu*
ani amnaa -b =u
1SG guest -ACC =be.1SG
'I am a guest.'

In non-matrix clauses, we find the forms with *√ky*. This is shown below for various subordinate clause types: conditional clauses (79a), temporal clauses (79b) and relative clauses (79c).

(79) a. *Arginaayeet sha tikatiyeek, hiyahoon*
[$_{CP}$ argin -a -ee -t shaa ti- √ky -a,i- -eek] √hy -a -hoon
sheep -PL -GEN -F meat 3FSG- be -PRES- -COND give -IMP.MSG- -us
'If there's mutton, give it to us.'
(Wedekind et al. 2007: 76)

b. *Yooyti toos'a ashshadhigt tikatihoob, ugawiisu atfar'i*
yooyti [$_{CP}$ too- s'a ashshadhig -t ti- √ky -a,i- -hoob]
daily DEF.ACC.FSG- hour nine -F 3FS- be -PRES- -when
oo- gaw -iis -oo a- √fr' -t,a,i-
DEF.ACC.MSG- house -ABL -my 1SG- move.out -MID.PRES.SG-
'Every day when it's nine o'clock, I leave my house.'

c. *Oomhiin w'abaay ikatiyeeb kaakan*
[$_{DP}$ oo- mhiin [$_{CP}$ oo- √by -aa- i- √ky -a,i-
DEF.ACC.MSG- place DEF.ACC.MSG- go -PTCP- 3MSG- be -PRES.SG-
-iyee -b]] ka- akan
-OBJ.REL -ACC NEG- know.1SG
'I don't know the place where he's gone.'

As we discussed in section 4.2.2, the negative past is expressed periphrastically using the copula. Even in matrix clauses, it surfaces with $\sqrt{ky}$ rather than the enclitic form. For this reason, the distribution of copula forms ($\sqrt{ky}$ vs. enclitic) goes beyond a simple matrix vs. non-matrix distinction since, even in root clauses, the choice of form is also dependent on the polarity of the clause.

(80) *Ani rhaayook kaaki*
ani rh -aa -ook ka- a- $\boxed{\sqrt{\text{ky}}\ \text{be}}$
1SG see -PTCP -you$_{\text{ACC.SG}}$ NEG- 1SG-
'I didn't see you'

It therefore seems necessarily to restrict the enclitic form of the copula not only to matrix clauses, but to those containing positive polarity. This entails treating the apparent 'matrix' enclitic as the specified form and the root form $\sqrt{ky}$ as the Elsewhere case, similar to what we concluded for negation above.

Given these observations, what should our realization rules for the copula be? Since it seems necessary to treat $\sqrt{ky}$ as the Elsewhere form, we need to find a positive specification for the enclitic forms. These are also portmanteau forms that realize the copula together with its agreement inflection. Furthermore, these forms have to be restricted to positive matrix clauses. For this reason, we propose that the enclitic copula has a contextual specification that mentions a sequence of heads. As (81a) shows, the first singular *=u* will be inserted as the form of the copula if jointly c-commanded within the morphosyntactic word by a polarity head that is specified for positive polarity (here, we adopt the ΣP of Laka 1990 in place of the NegP assumed above), a T head with the relevant features and a C head with an unvalued case feature (singling out root contexts).[25] The rule for second singular masculine *=wa* will differ minimally in the specification of T (81). We require similar rules for the other forms, but do not attempt to give an exhaustive list here. When this enriched contextual specification is not met, including in negated matrix clauses, the Elsewhere form ($\sqrt{ky}$) will be chosen (81d).

(81) a. $\sqrt{\text{be}} \longrightarrow \text{=}u \ / \ [\ [\ [\ [\ldots\ \_\_\ \ldots]\ \underset{[\text{NEG: }-]}{\Sigma}\ ]\ \overset{\text{T}}{\begin{bmatrix}\pi\text{: 1}\\ \#\text{: SG}\end{bmatrix}}\ ]\ \underset{[\text{CASE: }\square]}{\text{C}}\ ]_{X^0}$

b. $\sqrt{\text{be}} \longrightarrow \text{=}wa \ / \ [\ [\ [\ [\ldots\ \_\_\ \ldots]\ \underset{[\text{NEG: }-]}{\Sigma}\ ]\ \overset{\text{T}}{\begin{bmatrix}\pi\text{: 2}\\ \#\text{: SG}\\ \gamma\text{: M}\end{bmatrix}}\ ]\ \underset{[\text{CASE: }\square]}{\text{C}}\ ]_{X^0}$

c. …

d. $\sqrt{\text{be}} \longrightarrow \sqrt{ky}$

Again, the correct contextual conditions for allomorphy of the copula require reference to a null case value, as the matrix form cannot be treated as the Elsewhere form (similar to the situation with negation). In addition, the necessity of rules such as those in (81) further justify the validity of 'hyper-contextual rules' (Moskal & Smith 2016) or 'conditioning spans' (Merchant 2015) as necessary components of morphological analysis when it comes to allomorphy/suppletion. It seems difficult to uphold a more strict notion of adjacency that does not allow multiple heads to act jointly as allomorphic conditioners. Choi & Harley (2019) argue that the closer of two potential distinct allomorphy triggers is conclusive in determining the form of the target, but their analysis seems to be compatible with hyper-contextual rules such as those in (81) in addition to this.

[25] In order to derive the fact that enclitic forms are portmanteau morphemes, it will be necessary to block the distinct realization of T when the enclitic form of the copula is inserted. There are various options here, e.g. non-terminal realization (e.g. Radkevich 2010) or highly-specific zero exponents for T that match the contextual specification for the copula.

7 Conclusion

In this paper, we have discussed the allomorphy of object suffixes in Bidhaawyeet. We have shown that it appears to present a challenge to theories that impose locality constraints on potential allomorphic relations, either structural (Bobaljik 2012, Bobaljik & Harley 2017) or linear Embick (2010). However, we have shown that the apparent non-locality of the conditioning relation disappears once we realize that an independently-required process of concord brings the conditioning features of the trigger into a sufficiently local configuration with the target. The contingency of this apparent non-local allomorphy on complex head formation within the relative clause, as evidenced by periphrastic constructions, provides further support for this proposal.

In addition, it was shown that the complex distribution of object suffix forms can be captured as local allomorphy for case and number features within a structurally-defined locality domain (the maximal complex head or MWd). Even in cases in which it seems that the trigger for allomorphy is clause-type, we argued that this too reduces to case features. An important aspect of the proposal is that 'matrix forms' sometimes require a positive specification which must be conceived of as the absence of case. This was shown for the various forms of negation and the copula. This conclusion, that case features on root CPs may remain without values may appear controversial, but it seems necessary in order to avoid recourse to an arbitrary feature encoding clause type, such as [+matrix] or [+root]. The benefit here is that we can provide a fully unified distribution of the relevant forms in terms of case and number alone.

Finally, our findings have important consequences for our understanding of locality in allomorphy more generally. As mentioned at the outset, instances of argument-driven suppletion appear to challenge the strict formulations of structural locality in Bobaljik (2012) and Bobaljik & Harley (2017) that essentially limit allomorphy to the morphosyntactic word (and its sister). It has already been pointed out that this ceases to be a challenge once we have a syntactic process like Agree that can copy the features into the relevant local configuration (e.g. Alexiadou 2014, Kim & Chung 2017, Thornton 2019). This move should be treated with caution, however, as it serves to seriously undermine the general restrictiveness of the theory. Bidhaawyeet provides a clear case of this derivation in action. Since concord can be seen to transmit the relevant features throughout the noun phrase, features that may appear to be non-local are actually local. If this process is potentially going on below the surface in other languages, then recalcitrant cases such as Toosarvandani (2016) be accommodated. Arguably, however, the feature-transfer mechanism involved should be independently identifiable, as is the case in Bidhaawyeet.

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