

Relativization in Buli*

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This paper aims to provide a detailed description of two types of relativization (Head-external Relative Clause and Head-internal Relative Clause) in Buli, a rarely documented, endangered language of the Gur group of the Niger-Congo family spoken in Ghana. I also briefly address some theoretical and cross-linguistic implications of Buli relativization for the UG and the typological study on Head-internal Relative Clauses, and show that the findings from the present study on the Head-internal Relative Clause in Buli demand rethinking of the typology of the Head-internal Relative Clauses.

1. Introduction

Buli is an endangered language of the Gur group in the Niger-Congo family spoken in the north of Ghana. Buli is a strict SVO language with optional wh/focus movement and no pro-drop, and has at least four-way tone distinctions (i.e. high (´ H), mid (ˉ M), low (ˋ L) and rising (ˊ R)). There is an English-Buli dictionary with a brief introductory grammar by Franz Kröger (1992) but a comprehensive description of the grammar of Buli has not been undertaken. Due to the non-prestigious status of Buli in Ghana, fewer and fewer young children learn to speak Buli.¹ Thus it is necessary to document Buli and hopefully to help start its revitalization.

This paper focuses on the description of various aspects of relativization in Buli without presenting theoretical analyses of them. Buli has two types of relativization strategies: Head-external Relative Clause (HERC) and Head-internal Relative Clause (HIRC). Section 2 and Section 3 describe the basic syntactic and semantic characteristics of HERC and HIRC, respectively. Section 4 summarizes their properties of relativization in Buli. Finally, the Appendix discusses some typological and theoretical implications of the Buli HIRC for the cross-linguistic study of the HIRC.

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¹ In fact George Akanlig-Pare (personal communication) told me that there are now almost no children who are taught Buli and the language will disappear very soon unless something drastic must be done.

2. Head-External Relative Clause (HERC)

2.1. The Structure of HERC

Typical examples of HERC in Buli are illustrated in (1a) and (1b).^{2,3}

- (1) HERC
- a. [kpàr^wà-wā:y_i [āī e_i tà nā:b] lá].
 farmer-REL C have cow(indef.) PART
 ‘the farmer who has the cow’
- b. [ná:-būy_i [ātì kpār^wá tà] e_i lá].
 cow-REL C farmer(indef.) own PART
 ‘the cow which a farmer owns’

The head NP of the relative clause appears to the left of *(a)lɪ/(a)tɪ*, which we gloss as C(omplementizer) just for expository purposes. The initial vowel *a* is often deleted in colloquial use and if it is used, it sounds somewhat emphatic.⁴ The head NP takes one of the relativizing suffixes (REL; *-wa:y/ku:y/bu:y* etc.) and within the relative clause, there is a gap corresponding to the head NP. The right edge of the relative clause is marked by the particle *-la*.⁵ The basic schematic structures of HERC in Buli are represented in (2).

- (2) HERC (restrictive)
- a. Subject Relativization
 [NP_i-REL] [(a)lɪ e_i V (OBJ)] la]
- b. Object Relativization
 [NP_i-REL] [(a)tɪ SUBJ V e_i] la]

Nouns in Buli show class and indefinite/definite distinctions. Noun class is divided into 9 kinds (5 singular classes and 4 plural classes; see Kröger 1992). Some examples are illustrated below.

² I will use the symbol ‘e’ to indicate the gap that corresponds to the head noun of relative clauses. The list of abbreviations used in this paper is as follows: C=complementizer, class=class marker, CMP=completive, CPL=copula, def.=definite, FOC=focus particle, indef.=indefinite, PART=particle, PL=plural, REL=relativizing suffix, ST=stative suffix. In the text below, some ungrammatical examples have no tone transcriptions. This is because our informant told us that he was uncertain how to read an ungrammatical sentence with appropriate tones.

³ Throughout this paper, I will remain neutral as to whether the relativized head is really external to CP or internal to CP (in the latter derivation, it probably occupies [Spec, CP]). So, in a strict sense, I should call (2) *Head-first Relative Clauses*. I will use, however, the term Head-External Relative Clauses just for expository purposes. Also, the bracketing is presented without any argument. See the Appendix for brief notes on the syntactic structure.

⁴ In all examples below, I will freely use forms with/without the initial vowel *a*. Semantic effects of *a* remains to be seen.

⁵ The same particle is also used in other types of subordinate clauses to mark the right edge. See some discussion in the following sections.

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- (3) Indefinite forms (singular)
- a. kpār^{wā}
farmer(indef.)
'a farmer'
 - b. ná:b
cow(indef.)
'a cow'
 - c. mángò
mango(indef.)
'a mango'
- (4) Definite forms (singular)⁶
- a. kpār^{wā}-wá a'. kpār^{wā}-má
farmer-def.class. farmer-def.class.PL
'the farmer' 'the farmers'
 - b. ná:-mú
cow-def.class
'the cow'
 - c. mángò-kǔ
mango-def.class
'the mango'

In addition, nouns have relativized forms. When an NP is relativized, a relativizing suffix must be attached to the base indefinite form of the NP. The form of the relativizing suffix is determined by the class that the NP belongs to.⁷ As we will see below, the relativized head nouns combined with relative clauses are interpreted as definites.

- (5) Relativized forms (singular)⁸
- a. kpàr^{wà}-wā:y
farmer-REL
 - b. ná:-būy
cow-REL

⁶ All the definite class-markers (singular or plural) have a high tone (for the rising tone of (4c), see footnote 7).

⁷ The form of the relativizing suffix may be analyzed as 'class-marker' + -y with some phonological adjustments. For expository purposes, I gloss it as REL. See Section 2.6 for some relevant discussions.

⁸ Note the tone alternation for the relativized form of the noun 'farmer'. The tone of the (in)definite form for the noun is mid (cf. (3a) and (4a)), whereas in the relativized form (cf. (5a)), the mid tones fall to low. This tone alternation is also observed in compound formation such as adjectival modification (see. Section 2.5. below).

- c. mángò-kū:y
mango-REL

2.2. *At/Al Selection*

As a first approximation, the selection of the complementizer *(a)l/(a)ti* is determined by the grammatical function of the local element left to the C; *(a)l* is used for local subjects and *(a)ti* is used for non-subjects and all the others (cf. Section 2.8 for the role of the notion of ‘local’). Thus in the subject relativization (6)-(7), *(a)l* is selected, whereas in the object relativization (8)-(10), *(a)ti* is used.⁹

- (6) Subject Relativization
[kpār^wà-wā:y [ālī/*ātī t̄à nà:b] lá].
farmer-REL C have cow(indef.) PART
‘the farmer who has the stick’
- (7) Subject Relativization
[núrí-wā:y [ālī/*ātī t̄è núpō-wá ná:b] lá]
person-REL C gave woman-def. cow(indef.) PART
‘the man who gave the woman a cow’
- (8) Object Relativization
[ná:-būy [àtī/*ālī kpār^wā-wá s^wā] lá]
cow-REL C farmer-def. own PART
‘the cow which the farmer owns’
- (9) Object Relativization
[ná:-būy [àtī/*ālī nùrù-wá t̄è núpō-wá] lá]
cow-REL C person-def. gave woman-def. PART
‘the cow which the man gave to the woman’
- (10) Object Relativization
[ná:-būy [àtī/*ālī nùrù-wá p̄à t̄è núpō-wá] lá]
cow-REL C person-def. took to woman-def. PART
‘the cow which the man gave to the woman’

(11)-(13) are examples of indirect object relativization. Notice that *ati* is selected in all cases.

- (11) Indirect Object Relativization
[nūpò-wā:y [àtī/*ālī nùrù-wá p̄à nà:-mú t̄è] l̄ă]
woman-REL C person-def. took cow-def. to PART
‘the woman to whom the man gave the cow’

⁹ The particle *la* has an underlying high tone. In Buli, when a high tone follows a low tone, the high tone becomes a rising tone. Thus *lá* in (11) becomes *l̄ă*. Otherwise *la* gets a high tone. See also Akanlig-Pare and Kenstowicz (2002) for extensive discussions.

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(12) Indirect Object Relativization

[nūpō-wā:y [àtì/*āī nùrù-wá tē nà:-mú] lá]
 woman-REL C person-def. gave cow-def. PART
 ‘the woman to whom the man gave the cow’

It is also possible to relativize an instrumental object in a serial verb construction, as shown in (13).

(13) Instrumental Direct Object Relativization

[dyò-kū:y_i [àtì/*āī nùrù-wá pà e_i nàg núpō-wá]
 stick-REL C person-def. took beat woman-def.
 lá]
 PART
 ‘the stick with which the man hit the woman’

This sharply contrasts with other constructions such as Wh-question and Cleft sentences, in which the *atr/alr* selection is more relaxed; in these constructions, *alr* must be used for subject Wh-question and Cleft, whereas, either *atr* or *alr* can be used for non-subject Wh-question and Cleft as shown in (14)–(17).

(14) Wh-Question (subject)

ká wànà_i àlī/*ātī e_i tà nā:b
 Foc who C have cow(indef.)
 ‘Who owns a cow?’

(15) Wh-Question (object)

ká bwà_i àlī/ātī kpār^{wā}-wá tà e_i
 Foc what C farmer-def. have
 ‘What does the farmer have?’

(16) Cleft (subject)

ká kpār^{wā}-wá_i àlī/*ātī e_i tà nā:b
 Foc farmer-def. C have cow(indef.)
 ‘It is the farmer who owns a cow.’

(17) Cleft (object)

ká ná:-mú_i àlī/ātī kpār^{wā}-wá tà e_i
 Foc cow C farmer-def. have
 ‘It is the cow that the farmer owns.’

2.3. Relativization of PP

It is also possible to relativize PP in Buli. In (18), the locative PP is relativized and moved to the left of the C, *atr*. Note that *atr* is used since the locative PP is not a subject. Also, the relativizing suffix must be attached to the NP not to the P.

- (18) Locative PP Relativization
 [dò-kū:y pō] [àtì nùrù-wá pà dyō-kū nàg
 room-REL in C person-def. took stick(def.) beat
 núpō-wá] lá]
 woman-def. PART
 ‘the room in which the man hit the woman with the stick’

In general, it is impossible to drop a postposition in relativization in Buli, as shown in (19) and (20).

- (19) Locative PP Relativization (HERC)
 [yé-dí: *(pō) [àtì ñ gwà] lǎ] zyùàǵì.
 house-REL in C I slept PART is-big
 ‘The house in which I slept is big.’
- (20) Locative PP Relativization (HERC)
 [gbòŋ-kū:y *(zúk) [àtì ñ gwà] lǎ] zyùàǵì.
 roof-REL on C I slept PART is-big
 ‘The roof on which I slept is big.’

It is possible to strand a postposition in-situ and relativize the object of the postposition, as shown in (21). Again, it is impossible to leave out the in-situ postposition; a resumptive pronoun is also required.

- (21) Postposition Stranding and Resumption (HERC)
 mí dá [yé-dí: [àtì nùrù-wá dà:m bō dī
 I bought house-REL C person-def. PST lived it
 *(pō)] lá].
 in PART
 ‘I bought the house in which the man lived.’

When the whole PP is relativized, however, PP resumption is disallowed as shown in (22).

- (22) PP Relativization and PP Resumption (HERC)
 mí ná [yé-dí: pō [àtì nùrù-wá bō
 I saw house-REL in C person-def. lived
 (*dī-pō)] lá]
 it-in PART
 ‘I saw the house in/on which the man lived.’

The same is true with a definite head (23) (see Section 2.6 for definite heads).

- (23) HERC with a definite head noun
 mí ná [yénní pō [àtì nùrù-wá bō
 I saw house-def. in C person-def. lived
 (*dī pō)] lá]
 it in PART
 ‘I saw the inside of the house and the man lived in it.’

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In contrast, with an indefinite head (cf. Section 2.6), the PP resumption seems to be allowed as long as the sentence final *la* particle is absent.

- (24) HERC with an indefinite head noun
- | | | | | | | | |
|-----|--------|---------------|----|------|-------------|-------|----|
| mí | ɲá | [yéɾí | pō | [àtì | nùrù-wā | bō | dì |
| I | saw | house(indef.) | in | C | person-def. | lived | it |
| pō] | (*lá)] | | | | | | |
| in | PART | | | | | | |
- ‘I saw the inside of a house and the man lived in it.’

The absence of the particle *la* in (24) also suggests a possibility that it may be a conjunction of two sentences rather than a relative clause (see Section 2.7. for discussions).

One peculiar property of PP relativization in Buli is the fact that it is also possible to put the postposition after the subordinate clause, following the ending particle *la*. In such cases, again the postposition cannot be dropped.

- (25) NP-P Splitting in Relativization
- | | | | | | | |
|-----------|------|---|-------|------|-------|---------|
| [yé-dí: | [àtì | ɲ | gwà] | lǎ] | *(pō) | zyùàǵǐ. |
| house-REL | C | I | slept | PART | in | is-big |
- ‘The interior of the house in which I slept is big.’

- (26) NP-P Splitting in RC
- | | | | | | | |
|------------|------|---|-------|------|--------|---------|
| [gbòŋ-kū:y | [àtì | ɲ | gwà] | lǎ] | *(zúk) | zyùàǵǐ. |
| roof-REL | C | I | slept | PART | on | is-big |
- ‘The roof on which I slept is big.’

In this respect, it is worth noting that many postpositions in Buli are denominal and a whole PP (NP+P) functions as a nominal. This is illustrated by (27). As the translations indicate, the whole PPs in (28) and (29) function as objects of the verb ‘see’ syntactically and semantically. It is still worth noting, however, that the P does not take any suffix.

- (27) a. pō
i. in
ii. stomach
- b. zúk
i. on
ii. head

- (28) NP+P
- | | | | |
|---|-----|--------|-------|
| ɲ | ɲà | [yénní | zúk]. |
| I | saw | house | on |
- ‘I saw the roof (the top of the house)’

- (29) NP+P
- | | | | |
|---|-----|--------|------|
| ɲ | ɲà | [yénní | pō]. |
| I | saw | house | in |

‘I saw the inside of the house’

(30) and (31) are examples where PP is a complement of another P.

- (30) NP+P+P
 ñ jà [yénní pón-ní-pō].
 I saw house in-it-in
 ‘I saw the inside of the house.’

- (31) NP+P+P
 mí já [yé-dí: pón-ní-pō [àtì nùrù-wā bò] lā].
 I saw house-REL in-it-in C person-def. lived PART
 ‘I saw the inside of the house in which the man lived.’

(32) nevertheless shows that P can also serve as a locative PP, just as in other languages.

- (32) NP+P=Locative
 nùrú-wá dā:m bò [yènní *(pō)].
 person-def. PAST lived house in
 ‘The person lived in the house.’

2.4. Possessor RC

It is possible to relativize a possessor noun phrase in Buli. Again, *ati* is used in (34), since the grammatical function of the relativized noun phrase is non-subject.

- (33) Possessive
 gbánká ñà:η-kǎ
 book-def. cover-def.
 ‘the cover of the book’

- (34) Possessor Relativization
- a. Àtìm dà [gbán-kā:y [t̃/*ŋ Àm^wɔk ŋmĩrĩsĩ
 Atim bought book-REL C Amok designed
 kà nà:nkà] lá]
 its cover PART.
 ‘Atim bought the book whose cover Amok designed.’
- b. Àtìm dà [gbán-kā:y nà:nkà [t̃/*ŋ Àm^wɔk
 Atim bought book-REL cover C Amok
 ŋmĩrĩsĩ] lá]
 designed PART.
 ‘Atim bought the book whose cover Amok designed.’

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2.5. Relativization and Adjectival Modification

In Buli, adjectival modification and relativization are syntactically distinct. A basic paradigm of an indefinite NP form and a definite NP form are repeated here.

- (35) kpār^{wā} (=3)
 farmer(indef.)
 'a farmer'
- (36) kpār^{wā-wă} (=4)
 farmer-def.class.
 'the farmer'
- (37) kpār^{wā-wā:y} (=5)
 farmer-REL
 'the farmer'

Adjectives in Buli are post-nominal. Thus an adjective must follow a nominal that it modifies, as shown in (39).

- (38) wòŋ
 tall
- (39) Attributive Adjective
- | | | |
|----|--------------------|--------------------|
| a. | kpār ^{wā} | wòŋ |
| | farmer | tall |
| | 'a tall farmer' | |
| b. | *wòŋ | kpār ^{wā} |
| | tall(indef.) | farmer |
| | 'a tall farmer' | |

When an adjective is used as a predicate, it takes a stative suffix *-a*. Note also that when an adjective is used as a predicate, the copula *ka* cannot appear. In addition, the predicative adjective takes no definite class-marker.

- (40) Predicative Adjective
- | | | | |
|----|-----------------------|-------|---------|
| a. | kpār ^{wā-wá} | (*ká) | wōŋ-ā. |
| | farmer-def. | CPL | tall-ST |
| | 'The farmer is tall.' | | |
| b. | kpār ^{wā-bā} | (*ká) | wōŋ-ā. |
| | farmer(indef.)-PL. | CPL | tall-ST |
| | 'Farmers are tall.' | | |

The stative suffix can also be used with verbs, making them into stative verbs.

(41) *kāli*
to-sit

(42) *kāl-ā*
to-be-seated

As we have seen, nouns in Buli consist of a class-marker and a determiner. When a definite noun is modified by an adjective, however, it is on the adjective that the definite determiner/class-marker is realized and it is different from the class suffix that usually appears on nouns. Recall that the noun *kpār^{wà}* takes *wá* as a definite singular class-maker. Note that there is no class marker on the nouns in (43).

(43) Attributive Adjective (cf. (36))

a. *kpār^{wà}* *wòŋ-kǔ/*wá*
farmer tall-def.class
'the tall farmer'

b. **kpār^{wà}-wǎ/kǔ* *wòŋ*
farmer-def. tall
'the tall farmer'

(44) Predicative Adjective

a. *kpār^{wá}-wá* *pāgrā.*
farmer-def. is-strong
'The farmer is strong.'

b. *kpār^{wā}* *pāgrā.¹⁰*
farmer(indef.) is-strong
'A farmer is strong.'

(45) Attributive Adjective

a. *kpár^{wá}* *pāgrīk*
farmer strong(indef.)
'a strong farmer'

b. *kpār^{wā}* *pāgrīk-á*
farmer strong-def.
'the strong farmer'

c. *kpār^{wā}* *pāgrī-bā*
farmer strong-indef.PL.
'strong farmers'

Attributive adjective modification can also be expressed as a relative clause. In such cases, the relative clause takes a form of subject relativization.

¹⁰ (40b) and (44b) are not felicitous unless it is interpreted as a generic statement. See footnote 8.

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- (46) Adjective Modification with Relativization
 [kpàr^{wà}-wā:y [àlì wòŋ-à] lǎ] (*ká) pāgrā. (cf. (43))
 farmer-REL C is-tall-ST PART CPL is-strong
 ‘The farmer who is tall is strong.’
- (47) Adjective Modification with Relativization
 ñ dè [mángò-kū:y [lì māsà] (lǎ)].¹¹
 I ate mango-REL C delicious PART
 ‘I ate the mango that was delicious.’
- (48) Attributive Adjective
 ñ dè [mángò māsík].
 I ate mango delicious(indef.)
 ‘I ate a delicious mango.’

The ordering between an adjective and a relative clause is rigid; a relative clause must follow an adjective, since it is always the post-nominal adjective that bears the relativizing suffix (cf. (49) and (50)). As (51) shows, the adjective cannot follow the relative clause even if it takes the relativized form.

- (49) NP-AP_{REL}-CP
 [kpàr^{wà} wòŋ-kū:y [lì tà bònìŋ] lǎ] pāgrā.
 farmer tall-REL C have a donkey PART strong
 ‘The tall farmer who owns a donkey is strong.’
- (50) NP_{REL}-CP-AP
 *[kpàr^{wà}-wā:y [lì tà bònìŋ] lǎ] wòŋ-kǔ pāgrā.
 farmer-REL C have donkey PART tall-def.class strong
 ‘The tall farmer who owns a donkey is strong.’
- (51) NP-CP-AP_{REL} *[kpàr^{wà} [lì tà bònìŋ] lǎ] wòŋ-kū:y
 pāgrā.
 farmer C have donkey PART tall-REL strong
 ‘The tall farmer who owns a donkey is strong.’

2.6. Restrictive/Non-Restrictive

Restrictive HERC and non-restrictive HERC are difficult to distinguish in Buli. Buli allows the head noun of the relative clause to be a definite form without any relativizing suffix.¹² The examples are given in (52)-(54) with object relativization and (55)-(56) with subject relativization.

¹¹ It seems that the particle *la* can be dropped in this case; an exact condition on *la* drop remains unclear to us. See Section 2.7. and Section 3..

¹² In (43)-(47) our consultant did not like the sentences if the definite subject DP is replaced with an indefinite DP.

- (52) HERC with a relativizing suffix (object)
 [ná:-būy [àtì/*àlì kpār^{wā}-wá] s^{wā} lá]
 cow-REL C farmer-def. own PART
 ‘the cow which the farmer owns’
- (53) HERC with a definite head (object)
 [ná:-mú [àtì/*àlì kpār^{wā}-wá s^{wā} lá]]
 cow-def. C farmer-def. own PART
 ‘the cow, which the farmer owns’
- (54) HERC with a definite noun (object)
 [ná:-mú [àtì/*àlì kpār^{wā}-wá s^{wā}] lă] ká ná:b
 cow-def. C farmer-def. own PART CPL cow
 pāgrík.
 strong(indef.)
 ‘The cow, which the farmer owns, is a strong cow.’
- (55) HERC a relativizing suffix (subject)
 [núru-wā:y [àlì/*àtì tà dyòkù] lă] pāgrā.
 person-REL C have stick(indef.) PART is-strong
 ‘The person who has a stick is strong.’
- (56) HERC with a definite noun (subject)
 [núru-wā [àlì/*àtì tà dyòkù] lă] pāgrā.
 person-def. C have stick(indef.) PART is-strong
 ‘The person, who has a stick, is strong.’

Semantic differences between the pairs are quite subtle and are hard to explicate here. But our informant notes that the relative clause with a relativizing suffix is more ‘specific’ than the one with the definite head noun; (52) for example allows an interpretation where a speaker and a hearer share information as to which cow the speaker refers to. On the other hand, when asked ‘Which cow did you kill?’, (53) is not felicitous as an answer, since the question presupposes that both of the speakers share information about the cow in the discourse.¹³

In any case, it seems that relative clauses with definite head nouns, as well as those with relativized head nouns yield a restrictive interpretation in Buli. This suggests that the relative clauses with definite head nouns can be considered to result from simply dropping the relativizing suffix -y.

A caution is necessary for proper nouns, however. A proper noun can be used either as a common noun or as a proper noun in Buli. If a relativizing suffix is attached to a proper noun, it receives a restrictive interpretation (cf. (57)). If, on the other hand, no such suffix is attached, a non-restrictive interpretation is obtained (cf. (58)). But it is likely to be a subordinate clause rather than a non-restrictive relative clause (although more investigation is necessary).

¹³ Thus it is possible that the relativizing suffix is a specific indefinite determiner in Buli.

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- (57) Restrictive HERC
 [Àtìm-wā:y [lī s^wà nà:-mú] lá] tà ligra
 Atim-REL C own cow-def. PART have money
 ‘(Among many people whose names are Atim,) That Atim who owns the cow is rich.’
- (58) Subordination/Non-Restrictive HERC
 [Àtìm [lī s^wà nà:-mú] lá] ātī wà tà ligra
 Atim C own cow(def.) PART C he have money
 ‘Atim is rich because he owns a cow.’

As (58) shows, when a proper noun is used, the following sentence takes the complementizer/conjunction marker *ati* and a pronoun *wa*. Thus (58) looks more like a subordinate clause ‘since Atim owns a cow, he is rich.’. First, notice the form of the complementizer *ati* which is used for non-subjects in relativization. If the whole clause in (58) were a subject relative clause, *(a)li* should be used.¹⁴

Second, recall also that the resumptive pronoun cannot be used with a local noun phrase.

- (59) Cleft/Relativization and Resumption
- a. *ká Àtìm ātī/ālī wà tà ligra
 Foc Atim C he have money
 ‘It is Atim who is rich.’
- b. *núrí-wā:y [ātī/ālī wà tà] lá] ligra
 man-REL C he have PART money
 ‘the man who has is rich.’

Third, this type of construction seems to require some kind of ‘causal’ relation between the matrix clause and the clause in question. For example, (61) is not a felicitous sentence in contrast with (60), because the causal relation is pragmatically unnatural.

- (60) Non-restrictive HERC
 mì ŋmá [Àtìm [lī kò nà:-mú] lá]
 I blamed Atim C killed cow-def. PART
 ‘I blamed Atim, who killed the cow (I blamed Atim because he killed the cow.)’
- (61) Non-restrictive HERC
 *mì já [Àtìm [lī kò nà:-mú] lá]
 I saw Atim C killed cow-def. PART

¹⁴ It is worthy of a note that *ali/ati* also functions as a coordination marker.

(i) Aṭim (a)lī Amòk
 ‘Atim and Amok’

Its function as a clausal coordination marker remains to be investigated in future work.

‘I saw Atim, who killed the cow (I saw Atim because he killed the cow.)’

Finally, it is possible to add the word *jĩny* that explicitly indicates a causal relation.

- (62) Non-Restrictive HERC
 mì ɲmá [Àtìm [wà lĩ kò nà:-mú] lá]
 I blamed Atim he C killed cow-def. PART
jĩny
 reason
 ‘I blamed Atim, because he killed the cow.’

- (63) Non-Restrictive HERC
 mì ɲmá [Àtìm [lĩ kò nà:-mú] lá]
 I blamed Atim C killed cow-def. PART
jĩny
 reason
 ‘I blamed Atim, because he killed the cow.’

Summarizing this section, from the data at hand, it is difficult to tell whether what looks like a non-restrictive relative clause in Buli is really a relative clause or a subordinate clause. But the fact that Buli does not have to use a pronoun in (60) and (62)-(63) suggests that the language has some kind of appositive clauses, leaving a detailed investigation for future research.¹⁵

2.7. The Particle *la*

The particle *la* has many uses in the grammar of Buli, one of which is the use in relativization as the right edge marker. Although the exact nature of the particle *la* in relativization in Buli remains to be investigated, the particle *la* seems to be dropped under certain intricate conditions. One such condition is the indefiniteness of the relativized head noun.

- (64) HERC with an indefinite head noun
 mí ɲá [yéí pō [àtì nùrù-wā bō dī
 I saw house(indef.) in C person-def. lived it
 pō] (*lá)]
 in PART
 ‘I saw the inside of a house and the man lived in it.’

¹⁵ The particle *-la* usually can be optionally omitted under conditions that we do not understand exactly yet. If the relative clause is a predicate complement, however, it cannot appear at the end of the relative clause.

(i) wà kà [núpòwā'y [āII ɲmisi nālā] (*lá)]
 SheCPL woman-REL C very pretty PART
 ‘She is a woman who is very pretty.’

See also Section 2.7.

- (65) HERC with an indefinite head noun
 mí ná [yéí pō [àtì nùrù bō dī
 I saw house(indef.) in C person(indef.) lived it
 pō] [*lá]
 in PART
 ‘I saw the inside of a house and a man lived in it.’
- (66) HERC with an indefinite head noun
 mí ná [yénní pō [àtì nùrù-wā bō dī
 I saw house-def. in C person-def. lived it
 pō] [*lá]
 in PART
 ‘I saw the inside of the house in which the man lived in it.’
- (67) HERC with an indefinite head noun
 mí ná [yé-dí: pō [àtì nùrù-wā bō dī
 I saw house-REL. in C person-def. lived it
 pō] [*lá]
 in PART
 ‘I saw the inside of the house in which the man lived in it.’

As (64)-(67) show, when the relativized head is indefinite (cf. (66)-(67)), the particle *la* seems to be incompatible and must be dropped.¹⁶

Thus it seems that the absence/presence of *la* correlates with some semantic factors such as (in)definiteness. Incidentally, it should be noted that the particle *la* is homophonous with the demonstrative *la*, which attaches to definite nouns.

- (68) Demonstrative *la*
- a. núr(ú)-wá-lá
 person-def.-dem.
 ‘that man’
 - b. wá-lá
 def.-dem.
 ‘that (one)’
 - c. *lá
 dem.
 ‘that (one)’

Note that the particle *la* used in relative clauses and the definite demonstrative in (68) both have a high tone.

The use of demonstratives in relativization is not typologically rare (see Appendix for discussions on HIRC) and there is a cross-linguistic tendency that determiners grammaticalize into complementizers, or nominalizers.¹⁷ Although

¹⁶ It seems that sometimes the ‘indefiniteness’ (possibly, presupposition or discourse status) of the whole event is also relevant.

¹⁷ See Appendix for discussions and examples.

it is still premature to draw a decisive conclusion yet, the absence of *la* with an indefinite head noun correlates with the ‘demonstrative’ function of *la*, which codes a discourse presuppositional meaning incompatible with an indefinite entity. The exact intricacies of *la*, however, remain to be explicated.

2.8. Long-distance Relativization

Buli allows long-distance relativization, relativizing a constituent of an embedded clause, as shown in (69)-(70).

(69) Long-distance Object Relativization (HERC)

[nā:-būy	[t̥/*l̥i	Àt̥im	wē:nī	àyĩn	[Àm ^w ɔk	s ^w à]
cow-REL	C	Atim	say	that	Amok	own
lá]]	kp̥i					
PART	died					

‘The cow that Atim said that Amok owns died.’

(70) Long-distance Subject Relativization (HERC)

[nuru-wa:y	[t̥/*l̥i	Àt̥im	wē:nī	àyĩn	*(wa)	s ^w à
man-REL	C	Atim	say	that	he	own
ná:mú]	lá]	kp̥i	yá			
cow-def. PART.		died	CMP			

‘The man that Atim said that owns the cow died.’

Note that the resumptive pronoun is obligatory for long-distance subject relativization (this is also true of Wh-question and Cleft sentences). The obligatory resumption holds of long-distance subject dependency in general in Buli. It is also significant to note that the form of the matrix C is *(a)ti*, whether or not the long-distance relativized element is the subject or the object. Thus (69) and (70) tell us that what is important for the C-selection is not just the grammatical function; rather, in relative clauses, *ti* is used only when the local subject (i.e. the subject within the same clause as C) is extracted¹⁸

2.9. Island

As in many other languages, relative clauses form a syntactic island in Buli. Thus, it is ungrammatical to wh-question an element within a relative clause. This is illustrated in (72) with a wh-in-situ and in (73) with overt wh-movement. Buli is an optional wh-fronting language and allows only a single wh-phrase to be fronted to the sentence-initial position.¹⁹

(71) HERC

f̥i	ɲà	[núru-wā:y	[āli	kò	bàŋ-kà]	lǎ].
you	saw	person-REL	C	killed	lizard-def.	PART

¹⁸ I will discuss the mechanism of the C-selection in a separate paper.

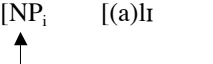
¹⁹ *Ka* is a focus particle; it is basically optional with wh-phrases, whereas it is obligatory when non-wh-phrases are focused. It is also used as a copula (see (34) above). When wh-phrase or focus phrase is fronted, the complementizer must be used just as in relative clauses.

- (78) HERC
 fì piém [fòrù-kū:y [àtì Àtìm s^wā] lá]
 you borrow bag-REL C Atim have PART
 ‘You borrowed the bag which Atim owns.’
- (79) Wh-extraction out of HERC with a resumptive pronoun
 ??ká wàná ālì fì piém [fòrù-kū:y [àtì wà tã] lá]?
 FOC who C you borrow bag-REL C he have PART
 ‘Who do you borrow the bag that (he) owns?’

3. Head-internal Relative Clause (HIRC)

3.1. The Structure of HIRC

Buli also allows Head-internal Relative Clause (HIRC), whose schematic structure is given in (81). Compare the HERC (82) and the HIRC (83). In (83), the semantic head of the relative clause remains inside the clause (i.e. to the right of C (*a*)/*li*) and takes the relativized form as in HERC (82). As in HERC, the right edge of the HIRC is marked by the particle *la*. There seems to be no truth-conditional difference in interpretation between HERC and HIRC.

- (81) HIRC (restrictive)
 [NP_i [(a)I_r e_i V NP-REL] la]

- (82) HERC
 [mángò-kū:y [tì/*lì ñ dè] lá] māsā.
 mango-REL C I ate PART delicious
 ‘The mango that I ate was delicious.’
- (83) HIRC
 [ñ [lì/*tì dè mǎngò-kū:y] lá] māsā.
 I C ate mango-REL PART delicious
 ‘The mango that I ate was delicious.’

Some more examples are given in (84)-(86).

- (84) Àtìm dà mángò
 Atim bought mango
 ‘Atim bought a mango.’
- (85) HERC
 ñ dǎ [mángò-kū:y [tì Atìm dà dǐē]
 I ate mango-REL C Atim bought yesterday
 lá].
 PART
 ‘I ate a mango that Atim bought yesterday.’

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- (86) HIRC
 η dẽ [Àtìm [lĩ dà mángò-kū:y dîē]
 I ate Atim C bought mango-REL yesterday
 lá].
 PART
 ‘I ate a mango that Atim bought yesterday.’

HIRC can involve any grammatical function of the matrix clause. (90)-(92) are examples in which an HIRC is a subject of the matrix clause. The internal head of the HIRC is *jaab* ‘thing’ or *ηāndīn-tà* ‘food’ (cf. (87)-(89)).

- (87) Indefinite forms (singular)
 a. jà:b
 thing(indef.)
 b. ηāndīn-tà
 food(indef.)
- (88) Definite forms (singular)
 a. jà:-mũ
 thing-def.class
 b. ηāndīn-tà
 food-def.class
- (89) Relativized forms
 a. jà:-būy
 thing-REL (singular)
 b. ηāndīn-tí:
 food-REL.PL (plural)
- (90) HIRC as Subject
 [Àtìm [ālĩ dẽ jà:-būy/ηāndīn-tí:] lá] ká mángò-tà.
 Atim C ate thing-REL/food-REL PART CPL mango-PL
 ‘What Atim ate are mangos.’
- (91) HIRC as Subject
 [Àtìm [ālĩ tẽ Àm^wɔk jà:-būy/ηāndīn-tí:] lá]
 Atim C gave Amok thing-REL/food-REL PART
 ká mángò-tà.
 CPL mango-PL
 ‘What Atim gave to Amok are mangos.’
- (92) HIRC as Object
 Àtìm dẽ [Àm^wɔk [ālĩ dà jà:-būy/ηāndīn-tí:] lá]
 Atim ate Amok C bought thing-REL/food-REL-pl. PART
 ‘Atim ate the thing/mangos that Amok bought.’

3.2. '(a)lr' and Grammatical Functions of Internal Heads

As the previous examples show, (a)lr not (a)tl is always selected in HIRC. It should be recalled that the choice of the type of C depends on the grammatical function of the extracted element in Buli (cf. (93)). In HIRC, the subject always must be extracted to the left of C. Hence in HIRC, (a)lr is always selected.

(94)-(97) demonstrate that only the local subject can and must be fronted to the left of C in HIRC in Buli. Thus it is impossible to have an internal head as a subject of the relative clause. (94) and (95) are ungrammatical because the object and the indirect object have been raised in front of C over the internal head (i.e. the subject), respectively. Compare (94) and (95) with the grammatical HIRC example (96). (97) indicates that a subject always must be in front of C in HIRC in Buli.

- (93) HERC (subject)
 Àm^wòk kò [núrú-wā:y [lì/*tì s^wà nà:b]
 Amok killed man-REL C owned cow(indef.)
 lá]
 PART
 'Amok killed the man who owned a cow.'
- (94) HIRC (fronted object)
 *Àm^wòk kò [nā:b_i [lì/tì nūrū-way s^wà e_i] lá].
 Amok killed cow(indef) C man-REL owned PART
 'Amok killed the man who owned a cow.'
- (95) HIRC (fronted indirect object)
 *Àtìm dē [Jōhn [lì Àm^wòk tē mángò-kū:y] là].
 Atim ate John C Amok give mango-REL PART
 'Atim ate the mango that Amok gave to John.'
- (96) HIRC (fronted subject)
 Am^wòk kò [nūrū-wa [lì/*tì s^wà nā:-būy] lá].
 Amok killed man-def. C owned cow-REL PART
 'Amok killed the cow that the man owned.'
- (97) HIRC (without any fronted noun)
 *Àm^wòk kò [[lì/tì nūrū-wa s^wà nā:-būy] lá].
 Amok killed C man-def owned cow-REL PART
 'Amok killed the cow that the man owned.'

There is no difference in grammaticality regardless of the form (emphatic vs. regular) and the person (1st, 2nd and 3rd).

- (98) HIRC (regular first person singular)
 [[lì/fi/wà [āli dē jà:-būy/ṅāndìn-ti:] lá] ká mángò-tà.
 I/you/he C ate thing-REL/food-REL PART CPL mango-PL
 'What I/you/he ate are mangos.'

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- (99) HIRC (emphatic first person singular)
 mí [lĩ dɛ̃ [jà:-bũy/ɲàndĩn-fĩ:] lá] ká mángò-tà.
 I C ate thing-REL/food-REL PART CPL mango-PL
 ‘What I ate are mangos.’
- (100) HIRC (proper noun)
 [ɲ̩ dɛ̃ [Àtĩm [ālĩ dà jà:-bũy/ɲàndĩn-fĩ:] lá].
 I ate Atĩm C bought thing-REL/food-REL PART
 ‘I ate what Atĩm bought.’

The basic schema of HIRC in Buli is represented as in (101).

- (101) a. [SUBJ_i [alɪ e_i V NP-REL] la]
 ↑ |
 b. *[NP_i [atɪ SUBJ V e_i NP-REL] la]
 ↑ |

In Buli, an indirect object in double object construction can also be an internal head of HIRC, just as an indirect object can be an external head of HERC. (cf. Section 2.2.). (102)-(104) are examples of HERC.

- (102) HERC (direct object)
 Àtĩm lĩ dɛ̃ [mángò-kũy [tì Àm^wòk tɛ̃ Jòhn] là].
 Atĩm PST ate mango-REL C Amok gave John PART
 ‘Atĩm ate the mango that Amok gave to John.’
- (103) HERC (indirect object)
 Àtĩm ɲà [núrú-wāy [tì Àm^wòk tɛ̃ mángò-kù] lá].
 Atĩm saw man-REL C Amok gave mango-def. PART
 ‘Atĩm saw the person to whom Amok gave the mango.’
- (104) HERC (indirect object)
 Àtĩm ɲà [núrú-wāy [tì Àm^wòk pà mángò-kù
 tɛ̃] là].
 Atĩm saw man-REL C Amok took mango-def.
 to PART
 ‘Atĩm saw the person to whom Amok gave the mango.’

Now compare (102)-(104) with the HIRC examples (105)-(108).

- (105) HIRC (direct object; serial verb construction)
 Àtĩm ɲà [Àm^wòk [lĩ pà mángò-kũy tɛ̃ nùrù-wá]
 Atĩm saw Amok C took mango-REL to man-def.
 lá].
 PART
 ‘Atĩm saw the mango which Amok gave to the person.’
 ‘*Atĩm saw Amok’s giving the person the mango.’

- (106) HIRC (direct object; double object construction)
 Àtìm dè [Àm^wòk [lì tèt Jōhn mángò-kū:y] lá].
 Atim ate Amok C gave John mango-REL PART
 ‘Atim ate the mango that Amok gave to John.’
 ‘*Atim saw Amok’s giving the person the mango.’
- (107) HIRC (indirect object; serial verb construction)
 Àtìm jà [Àm^wòk [lì pà mángò-kǔ tèt nùrù-wā:y]
 Atim saw Amok C took mango-def. to man-REL
 lá].
 PART
 ‘Atim saw the person to whom Amok gave the mango.’
 ‘*Atim saw Amok’s giving the person the mango.’
- (108) HIRC (indirect object; double object construction)
 Àtìm jà [Àm^wòk [lì tèt nùrù-wā:y mángò-kù] lá].
 Atim saw Amok C gave man-REL mango-def. PART
 ‘Atim saw the man that Amok gave the mango’
 ‘*Atim saw Amok’s giving the person the mango.’

In Buli, an internal head of HIRC cannot undergo any movement in contrast with some other languages, which allow an internal head to be shifted to the VP-initial position in HIRC.²⁰

The ungrammaticality of (109) indicates that in the double object construction, the direct object internal head cannot be shifted to the VP-initial position. Compare (109) with (108).

- (109) HIRC (indirect object; double object construction)
 *Àtìm dè [Àm^wòk [lì tèt mángò-kū:y_i Jōhn e_i] lá].
 Atim ate Amok C gave mango-REL John PART
 ‘Atim ate the mango that Amok gave to John.’

Another point to note is that (105)-(108) cannot have the ‘clausal complement’ reading, in which the object of the verb ‘see’ is the whole event of the embedded clause.

As shown in Section 2.3, in HERC in Buli, it is possible to relativize a whole PP. But it is impossible to form an HIRC with a PP as the internal head of the relative clause in Buli.

- (110) HIRC with a PP head noun
 *[ɲ̩ [tì gwā yé-dí: pō] la] zyūāgī
 I C slept house-REL in Part is-big
 ‘The house that I slept in is big.’

We have also seen above that Buli allows a relative head and a P to be separated in HERC. Again, this is not possible in HIRC.

²⁰ Cf. Diegueno, Cocopa, Mojave, Mooré ,etc. (see Basilico 1996).

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- (111) HIRC with a P-splitting
 *[[ɲ̩ [tì gwá gbòŋ-kū:y] lá] pō] zyūāgi
 I C slept house-REL PART in is-big
 ‘The house that I slept in is big.’

3.3. Indefiniteness Restriction

As we have seen in Section 2.6., the head of HERC can be a definite noun or sometimes a proper noun; in the latter case the relative clause is interpreted as non-restrictive/appositive.

- (112) HERC (restrictive)
 Am^wək kò [nà:-būy [tì/*lì Atim s^wà] lá].
 Amok kill cow-REL C Atim own PART
 ‘Amok killed the cow that Atim owned.’

- (113) HERC (restrictive)
 Am^wək kò [ná:-mú [tì/*lì Atim s^wà] lá].
 Amok kill cow-def. C Atim own PART
 ‘Amok killed the cow that Atim owned.’

It is impossible, however, for an internal head of HIRC to be a definite noun, which is known as *the Indefiniteness Restriction* in the literature on HIRC (cf. Williamson 1987).²¹ In other words, non-restrictive/appositive HIRC does not exist in Buli.

- (114) HIRC (with a definite head noun)
 *[NP_i [ali e_i V NP-def.] la]

- (115) HIRC (restrictive)
 Am^wək kò [nùrù-wǎ [lì/*tì s^wà nā:-bū*(;y)] lá].
 Amok kill man-def. C own cow-REL PART
 ‘Amok killed the cow that the man owned.’

As far as I know at this point, the HERC and the HIRC in Buli are truth conditionally equivalent. Thus, (116) has only a restrictive interpretation with the external head ‘the man’ as the semantic head (but see Section 3.11. for some semantic differences).

- (116) HIRC (non-restrictive)
 Am^wək kò [nùrù-wá [lì s^wà ná:-mú] lá].
 Amok kill man-def. C own cow-def. PART
 ‘*Amok killed the cow, which the man owned.’
 ‘Amok killed the man who owned the cow.’

²¹ It is well-known that the indefiniteness restriction is observed cross-linguistically in HIRC; cf. Navajo, Lakhota, Mojave, etc..

This contrasts with the HERC in Section 2.6., where we have seen that the head of a relative clause can be a definite form (possibly with -y drop).²²

3.5. Possessor RC

It is also possible in Buli to form an HIRC with a possessor noun phrase (cf. Section 2.4. for HERC).

- (117) HIRC with a possessor head noun)
 Àtìm dà [Àm^wɔk [fɪ/*tɪ ɲmĩrĩšɪ bánkā:y kà nà:nkà]
 Atim bought Amok C designed book FOC cover
 lá]
 PART.
 ‘Atim bought the book whose cover Amok designed.’

3.6. Long-distance Relativization

Recall that it is possible to relativize a noun phrase that is a constituent of an embedded clause in HERC in Buli. This strategy, however, is not available in Head-internal relativization. (cf. (69)-(70)).

- (118) Long-distance Object Relativization (HIRC)
 [Àtìm [fɪ wē:nɪ àyɪn [Àm^wɔk s^wà nā:-būy] lá]] kɸi
 Atim C say that Amok own cow-REL PART died
 ‘*The cow that Atim said that Amok owns died.’

- (119) Long-distance Object Relativization (HIRC)
 [Àtìm [fɪ wē:nɪ àyɪn [Àm^wɔk [fɪ s^wà nā:-būy] lá]]]
 Atim C say that Amok C own cow-REL PART
 kɸi.
 died
 ‘*The cow that Atim said that Amok owns died.’

They minimally differ in that in the latter, the embedded subject has been fronted within the embedded clause, as well, whereas in the former, no such fronting has occurred. In any case, both (118) and (119) are ungrammatical.

3.7. Islands

Just like a HERC, a HIRC forms a syntactic island and an element within an HIRC cannot be extracted. In the ungrammatical (120), the NP ‘Atim’ is extracted out of the HERC and the sentence is ungrammatical even with the resumptive pronoun (see Section 2.7.).

²² This may make untenable the earlier suggestion that the definite RC is formed by simple phonological drop of -y.

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(120) Extraction out of HERC

*ká Àm^wòk Ìrì Àtìm dè [mángò-kū:y [tì (wa)
 FOC Amok C Atim ate mango-REL C he
 da] la].
 bought PART
 ‘It is Amok such that Atim ate the mango that she bought.’

An element within a relative clause cannot be focused with the focus particle *ka*, as shown in (121)-(122). (See Section 3.11.)

(121) HIRC

*Àtìm dè [Àm^wòk [lì dà kà mángò-kū:y] lá].
 Atim ate Amok C bought FOC mango-REL PART
 ‘Atim ate the mango that Amok bought.’

(122) In-situ focus in HERC

*Àtìm dè [mángò-kū:y [tì ká Àm^wòk da] la].
 Atim ate mango-REL C FOC Amok bought PART
 ‘It is Amok such that Atim ate the mango that he bought.’

An internal head of HIRC cannot be wh-questioned; the sentences are ungrammatical whether it is moved (123), in-situ (124) or the whole HIRC is fronted (125).

(123) Wh-fronting (HIRC)

*ka bwà-wa:y tì fì dè [Atim [alì da] la]?
 FOC what-REL C you ate Atim C bought PART
 ‘What that Atim bought did you eat?’

(124) Wh-in-situ (HIRC)

*fì de [Atim [alì da ka bwà-wa:y] la]?
 you ate Atim C bought FOC what-REL PART
 ‘What that Atim bought did you eat?’

(125) Wh-in-situ (HIRC)

*[Atim [alì da ka bwa-wa:y] la]_i lì fì de e_i
 Atim C bought FOC what-REL PART C you ate
 ‘What that Atim bought did you eat?’

It is possible, however, to extract the subject that has been dislocated to the left of C as long as a resumptive pronoun is used.

(126) Wh-extraction of the Subject in HIRC

?ká wàrà àlì fì dè [*(wà) [lì dà jà:-būy/
 FOC who C you ate (he) C bought thing-REL
 mángòk-ū:y] lá]?
 mango-REL PART
 ‘Who did you eat the thing/mango that (he) bought?’

The sentence is ungrammatical, however, if the *wh*-subject remains within the lower clause (i.e. just in front of the C), as shown in (127) and (128).

(127) Wh-in-situ of a non-head subject in HIRC

*fī dè [ká wàná [āli dà jà:-būy] lá]?
 you ate FOC who C bought thing-REL PART
 ‘Who did you eat what (he) bought?’

(128) Wh-in-situ of a non-head subject in HIRC

*ká wàná [āli dè jà:-būy] lá] ātī fī dà?
 FOC who C ate thing-REL PART C you bought
 ‘Who did you buy what (he) ate?’

3.8. No Double Relativization

It is impossible to relativize more than one element at the same time.²³ Thus the head of a relative clause must be always unique.

(129) Double Relativization

*Ātīm jà [Ām^wòk [lī pà mángò-kū:y tē nùrú-wā:y
 Atīm saw Amok C took mango-REL to man-REL
 lá].
 PART
 ‘Atīm saw the mango and the man that Amok gave.’

(130) Double Relativization

*Ātīm jà [mángò-kū:y [tī Ām^wòk pà tē nùrú-wā:y]
 Atīm saw mango-def. C Amok took to man-REL
 lá].
 PART
 ‘Atīm saw that mango and the man that Amok gave.’

Focalization of one of the heads does not help as shown in (131).

(131) Double Relativization

*[(ká) mángò-kūy [tī Ām^wòk pà tē nùrú-wā:y] lá].
 FOC mango-REL C Amok took to man-REL PART
 ‘the mango and the man such that Amok gave it to him.’

3.9. Stacking

Buli allows various types of stacking of relative clauses. (132) is an example in which two HERCs are stacked.

²³ Double relativization is possible in HIRC in Japanese (cf. Kuroda 1992).

Relativization in Buli

- (132) HERC+HERC
 [mángò-kū:y [tì Àm^wòk dà] (lá)] [tì Àtìm dè]
 mango-REL C Amok bought PART C Atim ate
 lá] māsā.
 PART delicious
 ‘The mango that Amok bought and Atim ate is delicious.’

(133) is an example in which a whole HIRC is used as an external head of the stacked HERC.

- (133) HIRC+HERC
 [Àm^wòk [lī dà mángò-kū:y] (lá)] [tì Àtìm dè]
 Atim C bought mango-REL PART C Amok ate
 lá] māsā.
 PART delicious
 ‘The mango that Amok bought and Atim ate is delicious.’

When a HERC is embedded under an HIRC, one of the particles *la* must be deleted. Which one of them is deleted remains to be investigated.

- (134) HERC+HIRC
 [Atim [lī dè [mángò-kū:y [tì Àm^wòk dà] (*lá)]]
 Atim C ate mango-REL C Amok bought PART
 lá] māsā
 PART delicious
 ‘The mango that Amok bought and Atim ate is delicious.’

An internal head can be embedded under another HIRC when it functions as the internal head for both HIRCs.

- (135) HIRC+HIRC
 [Àtìm [lī dè [Àm^wòk [lī dà mángò-kū:y] (*lá)]]
 Atim C ate Amok C bought. mango-REL PART
 lá] māsā.
 PART delicious
 ‘The mango that Amok bought and Atim ate is delicious.’

The precise condition of *la* deletion in (134) and (135) is still unclear to us, but it is quite likely that this is due to the Indefiniteness Restriction on HIRC; the internal head of HIRC cannot be definite and therefore it is incompatible with the demonstrative/particle *la*.

Our informant reports that (136) sounds quite degraded. (136) is derived by combining the HIRC (137) and the HERC (138).

- (136) HERC+HIRC
 *Àtìm dè [[núrí-wā:y [tī Àm^wòk nà] lá]
 Atim ate man-REL C Amok saw PART
 [lī dà mángò-kū:y] lá]
 C bought mango-REL PART

‘Atim ate the mango such that Amok saw the man who bought it.’

- (137) HIRC
 Àtìm dè [nùrú-wá [lī dà mǎngò-kū:y] lá]
 Atim ate man-def. C bought mango-REL PART
 ‘Atim ate the mango that the man bought.’

- (138) HERC
 [tī Àm^wɔk ɲà] lǎ]
 man-REL C Amok saw PART
 ‘the man that Amok saw’

There is nothing syntactically wrong with (136) and its ungrammaticality is not expected; presumably, it is due to some processing difficulty caused by center embedding.

Notice (139) as well, which is ungrammatical probably for the same reason.

- (139) HERC+HERC
 *Àtìm dè [mǎngò-kū:y [lī [nùrú-wā:y [tī Àm^wɔk ɲà]
 Atim ate mango-REL C man-REL C Amok saw
 lǎ] dà] lǎ]
 PART bought PART
 ‘Atim ate the mango such that Amok saw the man who bought it.’

When an internal head of HIRC is embedded under another HERC as in (140)-(143), the sentence is ungrammatical due to the complex NP island (cf. Section 2.9. and 3.7.).

- (140) HERC+HIRC (Island)
 *Àtìm dè [Àm^wɔk [lī ɲà [nùrú-wā:y [lī dà
 Atim ate Amok C saw man-REL C bought
 mǎngò-kū:y]] lǎ]]
 mango-REL PART
 ‘Atim ate the mango that Amok saw the man who bought it.’

- (141) HERC+HIRC (Island)
 *Àtìm kò [Àm^wɔk [lī dè [nùrú-wā:y [lī dà
 Atim killed Amok C ate man-REL C bought
 mǎngò-kū:y]] lǎ]]
 mango-REL PART
 ‘Atim killed the man such that Amok ate the apple that he bought.’

- (142) HERC+HERC (Island)
 *Àtìm dè [mǎngò-kū:y [lī Àm^wɔk ɲà [nùrú-wā:y [lī
 Atim ate mango-REL C Amok saw man-REL C
 dà]] lǎ]]
 bought PART
 ‘Atim ate the mango such that Amok saw the man who bought it.’

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- (143) HIRC+HIRC (Island)
 *Àtìm dè [Àm^wòk [lī jà [John [lī tè nùrú-wā:y
 Atim ate Amok C saw John C gave man-REL
 mángò-kū:y]] lá]]
 mango-REL PART
 ‘Atim ate the mango that Amok saw the man who John gave it to.’

(140) and (141) contrast with (144), in which the external head of the lower HERC functions as the internal head of the higher HIRC. In this case, there is no island effect.

- (144) HERC+HIRC
 Àtìm kò [Àm^wòk [lī jà [nùrú-wā:y [lī dà
 Atim killed Amok C saw man-REL C bought
 mángò-kù]] lá]]
 mango-def. PART
 ‘Atim killed the man who bought the mango and Amok saw’

Recall that an internal head of HIRC can be embedded under an HIRC which also takes it as its internal head.

- (145) HIRC+HIRC (=135)
 [Àtìm [lī dè [Àm^wòk [lī dà mángò-kū:y]
 Atim C ate Amok C bought. mango-REL
 (*lá)] lá] māsā.
 PART PART delicious
 ‘The mango that Amok bought and Atim ate is delicious.’

3.10. Focus Interpretation

HERC and HIRC show an interesting difference in focus interpretation. In both HERC (146) and HIRC (147)-(148), the focus particle *ka* is attached to the element left of C and the relative clause is fronted as focalization. Recall that *ka* cannot appear within a relative clause (cf. (149); Section 2.9. (74) and Section 3.7. (121)).

- (146) HERC
 [ká mángò-kū:y [tì Àm^wòk dà] lá] tì Àtìm dè.
 FOC mango-REL C Amok bought PART C Atim ate
 ‘It is the mango that Amok bought that Atim ate.’

- (147) HIRC
 Àtìm dè [ká Àm^wòk [lī dà mángò-kū:y] lá].
 Atim ate FOC Amok C bought mango-REL PART
 ‘It is the mango that Amok bought that Atim ate.’
 ‘*It is Amok that Atim ate the mango he bought.’

- (148) HIRC
 [ká Àm^wòk [lì dà mángò-kū:y] lá] tì Àtìm
 FOC Amok C bought mango-REL PART C Atim
 dè.
 ate
 ‘It is the mango that Amok bought that Atim ate.’
 ‘*It is Amok that Atim ate the mango he bought.’

- (149) HIRC (= (121))
 *Àtìm dè [Àm^wòk [lì dà kǎ mángò-kū:y] lá].
 Atim ate Amok C bought FOC mango-REL PART
 ‘Atim ate the mango that Amok bought.’

In the HERC (146), what is interpreted as focus is ‘mango’; thus (146) is most naturally an answer to the question ‘what did Atim eat such that Amok bought?’. It is impossible, however, to interpret the HIRC (146) with a focus on ‘Atim’. (146), thus, cannot be used as an answer to the question ‘Who did you eat the mango such that he/she bought?’

In the HIRC (147) and (148), on the other hand, what is focused must be the internal head of the relative clause (e.g. the object ‘mango’) despite the surface adjacency between the focus particle and the embedded subject. Thus in contrast with the HERC (146), (147) and (148) cannot be an answer to the question ‘what did Atim eat such that Amok bought?’; rather it must be an answer to the question ‘Who did you eat the mango such that he/she bought?’.

3.11. Quantifier Interpretation

HIRC in Buli allows an element that is universally quantified to be an internal head, as well as an external head. (149) and (150) have the truth-conditionally same interpretation.

- (149) HERC
 [mángò-tí: mé:ná [tì Àtìm dà] lá] māsā.
 mango-def.PL. every C Atim bought PART delicious
 ‘Every mango that Atim bought was delicious.’

- (150) HIRC
 [Àtìm [lì dà mángò-tí: mé:ná] lá]
 Atim C bought mango-REL.PL. every PART
 māsā
 delicious
 ‘Every mango that Atim bought was delicious.’

Placement of the universal quantifier ‘every’ is free; thus it is possible to put it after the relative clause as in (151) and (152). Again, the interpretation remains the same in both sentences.

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- (151) HERC
 [mángò-tí: [t̃ Àtìm dà] là] mé:ná māsā
 mango-REL.PL. C Atim bought PART every delicious
 ‘Every mango that Atim bought was delicious.’
- (152) HIRC
 [Àtìm [l̃i dà mángò-tí:] lá] mé:ná māsā
 Atim C bought mango-REL.PL PART every delicious
 ‘Every mango that Atim bought was delicious.’

There is a case in which the semantic parallelism breaks down, however. When the universal quantifier is stranded within the relative clause in HERC, the truth condition of the sentence differs from the sentences above.

- (153) HERC
 [mángò-tí: [t̃i Àtìm dà mé:ná] lá] māsā
 mango-REL.PL. C Atim bought every PART delicious
 ‘Atim bought all the mangos and they were delicious.’

4. Summary and Some Theoretical Implications

The structures of HERC and HIRC in Buli are summarized below.

- (154) HERC (restrictive)
- a. Subject relativization
 [NP_i-REL [(a)l̃i e_i V (OBJ)] la]
NP_i-def.
 - b. Object relativization
 [NP_i-REL [(a)t̃i SUBJ V e_i] la]
NP_i-def.
- (155) HIRC (restrictive)
 [NP_i [(a)l̃i e_i V NP-REL] la]
 *NP-def.
- (156) HERC (non-restrictive)
- a. Subject relativization
 [NP(proper noun)_i [(a)l̃i e_i V (OBJ)] la]
 - b. Object relativization
 [NP(proper noun)_i [(a)t̃i SUBJ V e_i] la]
- (157) HIRC (non-restrictive)
 *[NP_i [(a)l̃i e_i V NP-def./Proper Noun] la]

In all types of relative clauses, one element is moved to the left of C and C is selected based on the grammatical function of the moved element; the right edge of the clause is marked by the particle *la*. In restrictive RC, head NPs take one of the relativized forms, depending on their noun class, whereas in non-restrictive RC, head NPs come in bare forms.

Appendix: Typological Implications of HIRC in Buli

The existence of HIRC in Buli has a number of important consequences for the typology of HIRC. This appendix takes up its implication for the typology of HIRC.

Head-internal Relative Clauses (also called Internally Headed Relative Clauses) are observed in a wide variety of languages across different language families; Old and Modern Japanese (Kuroda 1992 among others), Korean (Jhang 1991, Jung 1995), Tungus languages in the Altaic family such as Udihe (Nikolaeva and Tolskaya 2001). Tibeto-Burman languages such as Meithei (Chelliah 1997), Tenyidie (Subbarao and Kevichüsa 1999); Austronesian languages such as Riau Indonesian (Gil 2000) and *Tukang Besi*; Bearlake Athabaskan languages such as Slave (Rice 1989, Basillico 1993) and Dogrib (Saxon 2001), Navajo (Platero 1973, 1977, Hale), Tanaina (Thompson 1980), Koyukon (Thompson 1980), Kiowa-Tanoan languages such as Kiowa (Watkins 1984, Harbour 2001), Siouan languages such as Lakhota (Williamson 1984, 1987), Uto-Atzecan languages such as Hopi (Fauconnier 1971), Yaqui, (Heath 1972), Yuman languages such as Yavapai (Kendall 1976), Cocopa (Gorbet 1976), Diegueno (Gorbet 1976), Jamul Tiipay (Miller 2001), Muskogian languages such as Choctaw (Broadwell 1985), Algonquian languages such as Passamaquoddy (Bruening 2001), Iroquoian languages such as Mohawk (Baker 1996), Quechuan languages such as Imbabura Quechua (Cole 1982, Cole and Harmon 1982) and Cuzco Quechua (Lefebvre and Muysken 1988), Mismaplan languages such as Miskitu and Sumu (Hale and Salamanca n.d.), American Sign Language (ASL). (Fontana 1990, Miller 1990); Gur languages of Niger-Congo family such as Buli, Mooré (Tellier 1989), Dagbani (Wilson 1963), Supyire (Carlson 1994), Mande languages of Niger-Congo family such as Bambara (Bird 1968, Koopman 1992, Zribi-Hertz and Hanne 1995), Maninka (Bird 1963, 1968) and Dogon (Culy 1990); Amazonian languages such as Gavião (Moore 1984, 1989), Karitiana (Storto 1999), and Kayapo (Andres Pablo Salanova p.c.); South Caucasian languages such Georgian (Lea Nash class notes 2002). Hindi (Srivastav 1991).

Among these languages, at least Maninka and Supyire reportedly show some diagnostics of adjunct/correlative clauses in that the entire clause is dislocated to the clause-periphery (cf. also Hale 1976 for adjoined relative clauses in Walpiri). There is, however, a difficult question concerning explicit criteria for distinguishing HIRC and correlatives (cf. Srivastav 1991 for Hindi correlatives).

Also, HIRC in Japanese has been known to possess properties of genuine relative clauses as well as adjunct/appositive clauses

At a first glance, it might seem that HIRC is restricted to so called “non-configurational” languages (cf. Mohawk, Georgian, Navajo). But Buli does not

show any sign of “non-configurationality” such as free word order, null pronouns, and discontinuous expression.

There have been various attempts to derive a cross-linguistic generalization about the distribution of HIRC in the world languages. Several people have noted that HIRC seems to be restricted to SOV languages (Kuroda 1974, Gorbet 1977, Langendon 1977, Keenan 1978, 1985). (1) is Gorbet’s (1977) observation.

- (1) Gorbet’s observation
 Languages with HIRC are head-final and have powerful and productive patterns of nominalization which are at least superficially similar to RC’s.

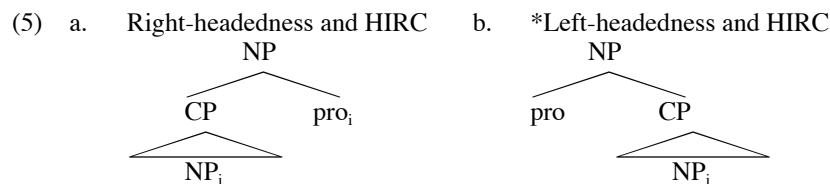
Similar observations about the correlation between HIRC and the word order have been noted by others (Kuroda 1974 (originally personal communication made to him by S.I. Harada), Gorbet 1977, Langendon 1977, Keenan 1978, 1985). Let us call it *OV Generalization*.

- (2) The OV Generalization:
 Languages with HIRC are head-final (OV).

Cole (1987) made a step forward in that he relates the SOV word order (and left-headedness of relative clauses) with the anaphoric binding (cf. Kayne 1994 for an alternative approach to the relation between anaphoric pronoun and c-command/precedence relation).²⁴

- (3) Cole’s Generalization
 Languages with HIRC are head-final (OV) and allow null anaphora.
- (4) An anaphor cannot both precede and command its antecedent²⁵.
 (Cole 1987:283)

On Cole’s theory, it is predicted that HIRC is allowed in (5a), but not in (5b).



Strictly speaking, Gorbet-Harada-Kuroda-Langendon’s OV Generalization and Cole’s Generalization makes different predictions; whereas the former depends on the clausal word order, the latter in essence crucially rests on the ordering between a relative clauses and a head.

²⁴ Gorbet (1977) and Culy (1992) suggest another generalization that HIRC correlates with nominalization. Their generalization (in particular the notion of ‘nominalization’), however, is too vague and it is not immediately clear what prediction it has.

²⁵ Cole (1987) uses the term anaphor for both pronouns and anaphors.

It turns out, however, that both generalizations suffer empirical problems, as wider coverage of various languages becomes available; a number of people have pointed out that the clausal word order generalization is not quite right; for SVO languages with HIRC, see Tellier (1989) for Mooré, Fontana (1990) and Miller (1990) for ASL, and for VOS languages with HIRC, Gil (2001) for Riau Indonesian and Donobue (1999) for *Tukang Besi* and see Chart 1. It should be also noted that languages with allegedly radically free word order such as Mohawk also allows HIRC.

On the other hand, as the Chart I shows, there is no correlation between the directionality of the head in relative clauses and HIRC; Mohawk (Baker 1996), Kiowa (Watkins 1984, Harbour 2001), Passamquoddy (Bruening 2001), Supyire (Carlson 1994), Bambara (Bird 1968), *Tukang Besi* (Donobue 1999), Mooré (Tellier 1989), for example, allows HIRC even though HERC in those languages are left-headed. Furthermore, Supyire, Bambara, and Mooré allows HIRC despite the fact that they have left-headed HIRC and disallow null anaphora.

Significantly, Buli adds another piece of strong evidence against these generalizations, since Buli is a SVO language with no use of null anaphora.

- (6) Anti-pro-drop
- a. n nàxǐ wà (3rd, OBJ)
 wá (3rd, OBJ; emphatic)
 I hit him
 ‘I hit him.’
- b. **pro* nàxǐ *pro*.
 ‘I hit him.’
- c. **pro* nàxǐ wà.
 ‘I hit him.’
- d. *n nàxǐ *pro*.
 ‘I hit him.’

Recently, Watanabe (2002) has proposed a refreshing look at the typology of HIRC and argued that HIRC is restricted to languages with a wh-indeterminate system.

(7) HIRC-Indeterminate Generalization (Watanabe 2002)

Languages with an indeterminate system make available for ordinary nominal expressions the long-distance dependency (checking or binding) used by the indeterminate. This recruitment makes HIRC possible.

Although I cannot introduce the details of his analysis here, the main idea is that HIRC is restricted to languages with “interrogative-based indefinites”, where indeterminates and Wh-elements show morphological similarities (see Haspelmath 1997 for a cross-linguistic survey of indeterminates). Watanabe provides support for his generalization from Lakhota, Quechua, Japanese, and

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Navajo, and as Chart 1 shows most languages with HIRC indeed have an indeterminate-system as Watanabe's Generalization expects.

Although his analysis is highly interesting and I believe that it will bring some deeper insight into the mechanism of HIRC, Buli is obviously a counterexample against his generalization (7). Buli does not have an indeterminate-system as shown in (8)-(9).

(8) The absence of indeterminate system in Buli

a. *mí* *ɲá* (*ká*) *wàná/bwà*
 I saw FOC who/what
 ‘*I saw someone/something’
 ‘Who did I saw?’

b. *mí* *ɲá* *núru/awai/ja:b*
 I saw man/someone/thing
 ‘I saw someone/something.’

(9) Wh-elements/Indeterminates in Buli

	+WH	-WH
+Human	(<i>ka</i>) <i>wana</i>	<i>nuru/awa</i>
-Human	(<i>ka</i>) <i>bwa</i>	<i>ja:b</i>

As (8) shows, neither (*ka*) *wana* nor (*ka*) *bwa* can mean ‘someone/something’. Buli utilizes either general nouns such as *nuru* (a man/someone) and *ja:b* (a thing/something) or a word *awai* (someone). Likewise, a detailed cross-linguistic scrutiny reveals that languages such as Slave and Bambara also lack an indeterminate-system.²⁶

Thus HIRC in Buli demonstrate that none of the existing cross-linguistic generalizations of HIRC are empirically adequate. A further investigation of a true generalization is left for a future research.

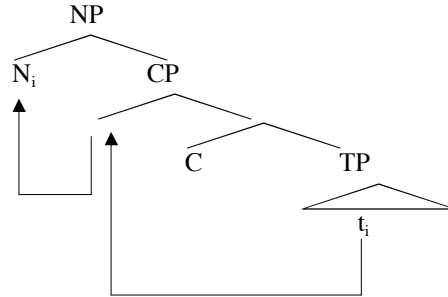
It should be noted that HIRC in Buli not only requires a reconsideration of the typology of HIRC; it also demands a reconsideration of the internal structure of HIRC. It has been often assumed with Cole (1987) that HIRC in fact involves a null external head. This analysis, however, cannot be applied to Buli, since it disallows null anaphora (cf. Hiraiwa 2002 for a theoretical investigation of the internal structure of Buli relative clauses; cf. also Broadwell 1985, Kuroda 1999, Watanabe 2002).

In relation to this final point, I would like to make some brief remarks on the head-raising analysis of relative clauses (cf. Vergnaud 1974, Kayne 1994 for variants of the head-raising analysis), which proposes that HERC is formed by raising/promoting the head NP in the original position to a position external to CP.²⁷

²⁶ Baker (1996) notes that the indeterminate-system in Mohawk is partial and Andres Pablo Salanova (p.c.) informed me that in Kayapo, the indeterminate-system only holds of ‘what’.

²⁷ Williamson (1987) proposes another kind of head-raising analysis, which claims that the head moves to [Spec, CP] at LF. This is essentially more similar to Watanabe's (1992) null operator analysis of the Japanese HIRC.

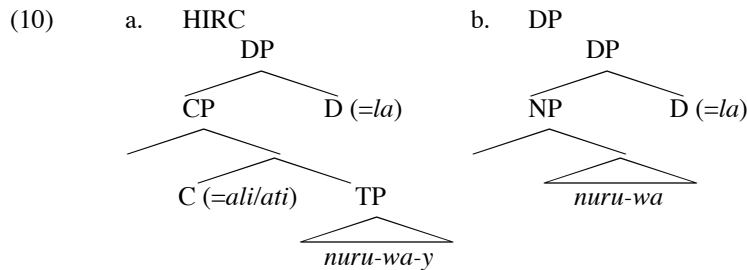
(9) Head-Raising Analysis of HERC



Under this theory, one may be tempted to relate the availability of obligatory wh-movement and the absence of HIRC (see also LF head-raising analyses of HIRC by Williamson 1987 etc.),²⁸

This approach, however, faces empirical problems in addition to conceptual problems; as noted by Watanabe (2002), Imbabura Quechua has obligatory wh-movement but still allows HIRC. The same is in fact true with Kiowa, Mohawk, Passamaquoddy, Supyire, and Kayaopo.^{29, 30}

Rather, the facts presented in this paper lead us to think that the structure of HIRC in Buli is as in (10a), in parallel with that of DP (10b)



Recall the fact that *la* in Buli also functions as a definite demonstrative, as shown in Section 2. The structure (10) reveals a syntactic parallelism between HIRC and DP; in both constructions, the demonstrative (*la*) takes a category (CP or NP) that contains a head N (*nuru* ‘man’) with a class/definite marker (*wa*).

This analysis can capture the discourse-functional relationship between (in)definiteness and absence/presence of the particle *la* in relativization in Buli,

²⁸ Languages such as Kiowa and Mohawk allow an internal head of HIRC to be incorporated into a verb. The LF head-raising analysis would require excorporation, which has rarely been attested and justified in natural languages (cf. Baker 1996). Also, in Japanese, for example, there is a significant interpretative difference between HIRC and HERC (e.g. the former is non-restrictive whereas the latter is restrictive).

²⁹ Baker (1996) observes that polysynthetic languages require obligatory wh-movement.

³⁰ Another possibility is to relate HIRC with optional focus movement. This is in fact pursued by Watanabe (2002), but it is not without problems, either. See the Chart I.

which has been discussed in the present paper. We have seen that the appearance of *la* is constrained most typically by (in)definiteness of the head noun. This restriction can be explained in terms of compatibility between the (in)definiteness of NP and the definiteness of the demonstrative *la*.³¹

The investigations of the cross-linguistic distribution of HIRC as well as of the internal and external syntax of HIRC are just set in a new phase and left for future research (see Hiraiwa in preparation).

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³¹ The demonstrative loses its deictic function in HIRC (or more generally relativization) in languages that require the demonstrative in HIRC (Buli, Georgian Lakhota etc.). See Hiraiwa (2002) for the role of the demonstratives in relativization in Buli and Georgian (as well as Lakhota and others) and the syntactic mechanism of *ati/ali* and their counterpart in Georgian.

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