Correlative structures in Bribri

Rolando Coto-Solano
University of Arizona

Adriana Molina-Muñoz
University of Illinois at Urbana-Champaign

Alí García Segura
Sëbliwák. University of Costa Rica

Abstract: Bribri (Chibchan, Costa Rica) has a structure where the relative clause appears with an internal noun head, as well as an external noun head in the main clause. We propose that this structure is a correlative, different from the linearized internally-headed relative clause (Coto-Solano 2009), and similar to the correlatives in Hindi (Bhatt 2003; Dayal 1996; Mahajan 2000; Srivastav 1991), Marathi (Wali 2006), Tibetan (Cable 2009; Keenan 1985) and Jamsai Dogon (Heath 2008). We compare this Bribri structure to its equivalent in Hindi, examine evidence for the separate existence of internally-headed relative clauses and correlatives, and suggest either non-local adjunction or IP-adjunction via movement as the generation mechanism for the phrase.

Keywords: syntax, relativization, Bribri, Chibchan family, correlatives, internally-headed relative clauses, Hindi, Indo-Aryan family, double heads

Resumen: La lengua bribri (Chibcha, Costa Rica) tiene una estructura donde la cláusula relativa aparece con dos cabezas, una en la frase relativa y otra en la cláusula principal. Proponemos que esta estructura es una correlativa, diferente de las cláusulas relativas bribri con cabeza interna (Coto-Solano 2009), y similar a las correlativas en hindi (Bhatt 2003; Dayal 1996; Mahajan 2000; Srivastav 1991), marathi (Wali 2006), tibetano (Cable 2009; Keenan 1985) y jamsai dogon (Heath 2008). Aquí se compara la estructura Bribri con su equivalente correlativo en hindi, la evidencia para postular un correlativo separado de las relativas de cabeza interna, y se sugiere que el mecanismo de generación es adjunción no-local o adjunción a la frase IP.

Palabras clave: sintaxis, relativización, bribri, familia chibcha, correlativas, cláusulas relativas de cabeza interna, hindi, familia indo-aria, cabezas dobles

1 Introduction

Bribri is a Chibchan language spoken by approximately 3,000 people in Southern Costa Rica (Instituto Nacional de Estadística y Censo 2013). It is a language classified as *vulnerable* by UNESCO (Moseley 2010; Sánchez Avendaño 2013), and thanks to the work of numerous teachers and activists it still plays a role in the community. Bribri displays two relativization strategies, one using internally-headed relative clauses, and one where the head noun appears in both the relative and the main clause. This paper focuses on the second construction, which we call *correlative* due to its parallels to structures found in Indo-Aryan languages. In Section 2 we will describe the relativization strategies in Bribri. In Section 3, we will look at the similarities between Hindi and Bribri correlatives, and how correlatives are different from internally-headed relative clauses in Bribri. In Section 4 we will discuss possible syntactic analyses of correlatives; and in Section 5 we will briefly

discuss the potential existence of these structures in other languages of the Americas. Finally, in Section 6 we will present the conclusions and questions for further research.

2 Bribri relativization

Bribri is an ergative language with an SOV syntactic structure. It is not typologically straightforward, in that it has some traits of VO languages, such as subordinate and complement clauses following their main verbs. Most of its traits, however, are those of OV languages; for instance, postpositions, quantifiers, demonstratives and case particles follow the nouns, and most importantly, relative clauses preceed the position where the noun would appear in the main clause.

2.1 Bribri internally-headed relative clauses

Internally-headed relative clauses (henceforth IHRCs) constitute the main documented relativization strategy in Bribri[1]. These constructions occur to the left of the position where the noun would be expected to appear in the main clause. They have been described in Wilson (1984), Villalobos (1994), Constenla et al. (1998:53-54) and Coto-Solano (2009), and practically all types of heads, from ergatives to locatives, are available for relativization (Coto-Solano 2009:470). The example in (1) shows how two clauses are combined into a prototypical IHRC.[2,3]

(1) a. Be' tö **ù** sṵ́.
    you ERG house.ABS see.PRF
    'You saw the house'

   b. Ye' tö **ù** yö'.
    I ERG house.ABS build.PRF
    'I built the house'

   c. Ye' tö [be' tö **ù** sṵ́] e' yö'.
    I ERG you ERG house.ABS see.PRF DEM build.PRF
    'I built the house that you saw' (Coto-Solano 2009:469)

Notice in (1) that *ye' tö* 'I ERG' remains in-situ, and the relative clause appears at the left edge of what corresponds to the absolutive position in the main clause. The relative clause can also occur at the left edge of what corresponds to the ergative position in the main clause, as shown in (2) below.

---

[1]This paper uses data from published sources, as well as corrections made to previously existing data and materials by the third author, who is a native speaker of Bribri.

[2]This paper follows the orthographic conventions in Constenla et al. (1998). An acute accent (´) indicates a falling tone, a grave accent (`) indicates a high tone, and a circumflex accent (^) indicates a rising tone. If the vowel has no tonal diacritic it is either low or neutral (Coto-Solano 2015). Underlining indicates a nasal vowel. The glyphs 'ë' and 'ö' correspond to the lax vowels /ɪ/ and /ʊ/. The glyph 'l' represents the lateral flap /ɺ/, and the glyph 'y' represents the voiced affricate /ʥ/.

[3]All abbreviations correspond to the Leipzig Glossing Rules (Bickel et al. 2008) or to the norms for the authors dealing with Hindi except *RP*, which stands for the Bribri recent perfect aspect (Constenla et al. 1998:44).

(2) [**Alákölpa** tö ikuȍ wé] e'pa tö balò yawé.
    women-PL ERG corn grind-RP   DEM-PL ERG liquor make-RP

    'The women who ground the corn made the liquor.'   (Villalobos 1994:231)

IHRCs have no relative pronouns or relativizers, but they do have a demonstrative pronoun in the main clause that is coreferential with the internal head noun in the relative clause. This demonstrative can take suffixes such as the diminutive morpheme, as in (3a), or it can be replaced by other demonstratives from the rich deictic repertoire in Bribri, as in (3b). It can also take a plural morpheme, as shown in (2) above.

(3) a. [Chìchila$_i$ tö mìchi kuwéwa̱] **e'la**$_i$ tö chkà katéwa̱.
       dog-DIM ERG cat bite-RP   DEM-DIM ERG meat eat-RP

       'The small dog that bit the cat ate the meat'   (Villalobos 1994:232)

    b. Ye' tö [be' tö ù$_i$ sú̱] **dià**$_i$ yö'.
       I   ERG you ERG house.ABS see-PRF   DEM(BELOW.DISTANT) build-PRF

       'I made the house down there, which you saw'   (Coto-Solano 2009:471)

Bribri IHRCs have been analyzed as being a case of linearization of two coreferent nouns, (Coto-Solano 2009), where the copy in the main clause is not overtly pronounced (Kayne 1994), and the demonstrative follows (and agrees with) the null element. An example of such an analysis is shown in (4), where the first copy remains inside the relative clause and the external copy is deleted.

(4) Ye' tö [be' tö **ù** sú̱] **ù** e' yö'.
    I   ERG you ERG house.ABS see-PRF   house.ABS DEM build-PRF

    'I built the house that you saw'   (Coto-Solano 2009:475)

2.2 Bribri correlatives

There is, however, a second type of relative clause where the head noun appears both in the relative and in the main clause, as shown in (5). This strategy is used, for example, to clarify ambiguous referents. Notice that in (5a), the phonetically null external referent could refer to either the "cat" or the "mouse" in the relative clause. In (5b), however, the "mouse" in the relative clause is clearly referenced in the main clause.

(5) a. [**Pûs** tö **skué** kata'] ~~pûs/skué~~ e' kie Nini.
       Cat ERG mouse.ABS eat-PRF   cat/mouse DEM call-PRF Nini

       'The cat that ate the mouse is called Nini.' ~ 'The mouse that the cat ate is called Nini.'

    b. [Pûs tö **skué** kata'] **skué** e' kie Nini.
       Cat ERG mouse.ABS eat-PRF   mouse DEM call-PRF Nini

       'The mouse that the cat ate is called Nini.'

The syntactic behavior of the sentence with two phonetically active nouns is different to that of IHRCs. We will provisionally call this structure a *correlative*, given that this is the name of

similar structures in numerous languages, including Hindi (Bhatt 2003), Marathi (Wali 2006), Tibetan (Cable 2009; Keenan 1985) and Jamsai Dogon from the Niger-Congo family (Heath 2008). The syntactic contrasts between Bribri IHRCs and its posited correlatives will be the subject of the next section.

3 Why is the correlative different from the IHRC?

Based on the examples presented in Section 2, one could argue that these are the same structures with an optional use of the external head. Nevertheless, there are differences in syntactic behavior between the structures, which we will discuss in this section.

3.1 Differences from structures with two heads

There is only one language, Kombai from Papua New Guinea, where constructions with both an internal and an external head have been described as *double-headed relatives*, rather than correlatives (Cinque 2011; Vries 1993). These double-headed structures are defined as a combination of "the features of externally-headed and internally-headed relative clauses in a single structure: they have both an external head noun and a noun corresponding to the head noun inside the relative clause" (Dryer 2013). An example of a Kombai double-headed relative is shown in (6).

(6) doü adiyano-**no**   doü deyalukhe.
     sago give.3PL.NONFUT-**CONN** sago finished.ADJ
     'The sago that they gave is finished.'   (Vries 1993:78)

Based on the data provided by Cinque (2011), we can distinguish two main differences between Kombai and the structures we identify as Bribri correlatives. First, in double-headed structures, such as (6), the verb in the relative clause uses attributive morphology, i.e. non-finite. This is not the case for Bribri, where the verb inside the relative clause always uses finite morphology. Second, Bribri uses a demonstrative pronoun in the main clause, but Kombai does not.

3.2 Previous comparisons between Bribri and Hindi

Correlative structures have been most extensively studied in Hindi (Bhatt 2003; Dayal 1996; Mahajan 2000; Srivastav 1991) and Marathi (Wali 2006). The sentence in (7) shows a Hindi example.

(7) [jo   **(laRkii)** khaRii hai   ] vo   **(laRkii)** lambii hai.
       REL girl   standing be-PRES DEM girl   tall   be-PRES
     'The girl who is standing is tall.'   (Dayal 1996:160)

In the construction in (7), the relative clause contains a relative pronoun *jo*, and it is linked to the main clause by a demonstrative pronoun *vo*. The relative clause occurs at the left periphery of the main clause. Also notice that the head noun *laRkii* 'girl' can occur in both the relative and main clauses.

The first person to suggest a parallel between Bribri relative clauses and Hindi correlatives was Villalobos (1994). She states that Bribri uses the word *wẹ́* as a relativizer similar to Hindi *jo*, but this cannot be the case because *jo* is obligatory in Hindi finite relative clauses, whereas *wẹ́* is not used in

30

most of Villalobos' Bribri examples, and it is not necessary to form a relative clause, as shown by the examples in this work and in other sources (Constenla et al. 1998; Coto-Solano 2009; Wilson 1984). The word *wé* can be better described as a demonstrative pronoun, meaning "that one" or "the given one". Furthermore, Villalobos (1994:228) only gathered one form of this pronoun because of the regions where she collected her data (Bratsi and Katsi), areas where language loss is more advanced, but there are actually two of these pronouns, the human *wé* and the non-human *wéri*. These are exemplified in (8) below:

(8) a. [Pûs **wéri**   tö   skué   kata'   ] e'   kie   Nini.
      Cat which.NONHUMAN ERG mouse.ABS eat-PRF   DEM call-PRF Nini
      'The cat that ate the mouse is called Nini.'

    b. [Awá **wé**   dör Juan él   ] e'   dör bua'ë.
      doctor which.HUMAN COP Juan brother   DEM COP good-very
      'The doctor who is Juan's brother is good.'

Notice that the position of *wé* relative to the ergative marker is one akin to that of other demonstratives, as shown in (9), and not one typical of an element in the head of a complement phrase, as *jo* in Hindi, as shown in (7) above.

(9) a. Sìkua **sé**   **tö**   se'   siwa' stsë'.
      foreigner DEM(NEARBY) ERG our.INCL story listen.PRF
      'The foreigner listened to our story.'   (Constenla et al. 1998:94)

    b. [Aláköl **wé** **tö**   sku' yawé   ] e'   tö   ye' a dikó mé.
      woman DEM ERG bag make.RP   DEM ERG I   to date give.RP
      'The woman who makes bags gave me some (pejibaye) dates.'   (Villalobos 1994:228)

In her study, Villalobos (1994) presents Bribri structures where the relative clause occurs to the left of the ergative in the main clause, as in example (2) above; but leaves other constructions such as (1) aside, in which the relative clause appears center-embedded. Therefore, in her analysis, Bribri relative clauses seem to be always peripheral to the main clause, missing the embedded relative which is present in both Bribri and Hindi.[4]

---

[4]In addition to the issues with *wé*, both Wilson (1984) and Villalobos (1994) interpret the demonstrative and the following noun *kabàiö* 'horse' in the main clause as a single constituent, as shown in Wilson's translation of (i). As a consequence, Wilson interprets this external *kabàiö* as the head of the relative clause. However, this *kabàiö*, being to the right of the demonstrative, is actually in a genitive relationship with the actual, covert head of the relative clause, expressed below as zero. This is further evidence that the head of the correlative precedes the demonstrative in the main clause.

(i) [Wëbla tö be' a kabàiö$_i$ wé tawé] ∅$_j$ e' kabàiö$_k$ sawé ye' tö.
    man   ERG you BEN horse.ABS DEM buy.RP   DEM horse.ABS see.RP I   ERG
    Wilson's translation: 'I saw the horse that the man bought for you'   (Wilson 1984:186)
    Actual translation: *'I saw the horse$_k$ of the horse$_{i,j}$ that the man bought for you'

3.3 Defining characteristics of Hindi correlative structures

Hindi presents three types of finite relative clauses: (i) correlatives or left-peripheral, (ii) embedded or English-type, and (iii) right-peripheral. According to Srivastav (1991) and Dayal (1996), correlative constructions in this language constitute a separate relativization strategy, different from embedded and the right-adjoined relatives. In particular, she points out three asymmetries among them. First, correlatives allow the occurrence of an external head noun both in the relative clause and in the main clause as shown in example (7), repeated below as (10), whereas this is not allowed in the other two constructions, as shown in examples (11) and (12).

(10) *Correlative*

[jo **(laRkii)** khaRii hai   ] vo **(laRkii)** lambii hai.
  REL girl   standing be-PRES DEM girl   tall   be-PRES

'The girl who is standing is tall.'   (Dayal 1996:160)

(11) *Right-peripheral relative*

a. vo **laRkii** lambii hai   [jo ∅   khaRii hai.   ]
   DEM girl   tall   be-PRES REL (girl) standing be-PRES

b. *vo **laRkii** lambii hai   [jo **laRkii** khaRii hai.   ]
   DEM girl   tall   be-PRES REL girl   standing be-PRES

c. *vo ∅   lambii hai   [jo **laRkii** khaRii hai.   ]
   DEM (girl) tall   be-PRES REL girl   standing be-PRES

'The girl who is standing is tall.'   (Dayal 1996:160)

(12) *Embedded relative*

a. vo **laRkii** [jo ∅   khaRii hai   ] lambii hai.
   DEM girl   REL (girl) standing be-PRES tall   be-PRES

b. *vo **laRkii** [jo **laRkii** khaRii hai.   ] lambii hai.
   DEM girl   REL girl   standing be-PRES   tall   be-PRES

c. *vo ∅   [jo **laRkii** khaRii hai   ] lambii hai.
   DEM (girl) REL girl   standing be-PRES   tall   be-PRES

'The girl who is standing is tall.'   (Dayal 1996:160)

Second, correlatives must have a demonstrative pronoun in the main clause, whereas both embedded and right-peripheral relatives do not have this restriction, as shown in (13).

(13) a. *Correlative*

*[jo **(laRkii)** khaRii hai   ] ∅   **(laRkii)** lambii hai.
   REL girl   standing be-PRES (DEM) girl   tall   be-PRES

b. *Right-peripheral relative*

∅   **laRkii** lambii hai   [jo khaRii hai.   ]
(DEM) girl   tall   be-PRES REL standing be-PRES

32

c. *Embedded relative*

∅   **laRkii** [jo   khaRii   hai   ] lambii hai.
DEM girl   REL standing be-PRES   tall   be-PRES

'The girl who is standing is tall.'   (Dayal 1996:160)

Srivastav (1991) and Dayal (1996) notice that some systematic exceptions are found to the demonstrative requirement. For instance, if the DP is modified by, or is, *sab/dono/tiino* 'all/both/all-three', the demonstrative is omitted, as in (14). Srivastav (1991), in particular, argues that *sab/do/tiino* 'all/both/all-three' have a null demonstrative (i.e. partitive construction).

(14) [jo   laRke khaRe   hai   ] { ve / dono / sab / *do / *kuch / *adhiktam
       REL boy.PL standing be-PRES   they both   all   *two *few   *most

      } lambe haiM.
        tall   be-PRES

Lit: 'Which boys are standing, { they / both of them / all of them / *two of them / few of them / *most of them } are tall.'   (Grosu and Landman 1998:164)

Example (14) is used by Srivastav (1991), and later by Grosu and Landman (1998), to propose that correlatives are a kind of "maximalizing relative", where only "universal and definite determiners are allowed" (Grosu and Landman 1998:164). This would explain the ungrammaticality of the sentence with the quantifiers *do* 'two', *kuch* 'few' and *adhiktam* 'most', which only cover a subset of the interpretation of the head.

Being the correlatives quantificational constructions, and based on the asymmetries noted, Srivastav (1991) and Dayal (1996) analyze them as base-generated adjoined to IP. On the contrary, embedded relatives are generated inside DP and optionally extraposed (i.e. resulting in a right-peripheral relative).

3.4 Are Bribri IHRCs and correlatives different structures?

While Bribri relatives with two heads do not show some of the behaviors characteristic of Hindi correlatives (e.g. multiple relatives),[5] there are many similarities between the two structures, which

---

[5]Hindi correlatives allow multiple relativization, i.e. the relative clause can contain multiple relative pronouns, which are coindexed with the same number of demonstrative pronouns in the main clause; whereas both embedded and right-peripheral relatives cannot, as shown in (ii).

(ii) a. *Correlative*

[jis   laRkii-ne$_i$ jis   laRke-ke$_j$ saath khelaa   ] us-ne$_i$ us-ko$_j$ haraayaa.
  REL girl-ERG REL boy-GEN with play-PRF   DEM-ERG DEM-ACC defeat-PRF

'Every girl defeated the boy she played with' (Lit. 'Which girl$_i$ played with which boy$_j$, she$_i$ defeated him$_j$') (Dayal 1996:197)

b. *Right-peripheral relative*

us-ne$_i$ us-ko$_j$ haraayaa [jis   laRkii-ne$_i$ jis   laRke-ke$_j$ saath khelaa.   ]
DEM-ERG DEM-ACC defeat-PRF   REL girl-ERG REL boy-GEN with play-PRF

c. Impossible to construct with embedded relatives (Dayal 1996:197)

also suggests that these Bribri correlatives are different from their corresponding IHRCs. We will follow Srivastav (1991) and Dayal (1996)'s observations on the behavior of correlative constructions in order to investigate the difference between these two relativization strategies. We will investigate the following properties of correlative structures (Alexiadou et al. 2000; Dayal 1996; Grosu and Landman 1998; Srivastav 1991):

(i) The peripheral position of the correlative.

(ii) The possibility of spelling out the nominal head both in the relative clause and the main clauses.

(iii) Demonstrative requirement in correlatives.

(iv) Maximal quantification in correlatives.

Regarding the peripheral position, IHRCs in Bribri can in occur non-initial positions, as in (1c), repeated here as (15). Correlative clauses, however, can only occur at the beginning of a sentence, as in (16a), and are ungrammatical in other positions, as in (16b). This is not because only the ergative is available to the correlative. The sentences in (17) show a non-initial argument, the absolute, being described by a correlative structure, but this is only available if the correlative appears at the beginning of the sentence, as in (17b).

(15) Ye' tö [be' tö **ù** sṹ] e' yö'.
      I   ERG you ERG house.ABS see-PRF DEM build-PRF

    'I built the house that you saw'

(16) a. [Pûs tö **skué** kata'] **skué** e' kie Nini.
         cat ERG mouse.ABS eat-PRF   mouse DEM called-PRF Nini

      'The mouse that the cat ate is called Nini.'

    b. *Ye' tö [pûs tö **skué** kata'] **skué** e' sṹ.
         I ERG   cat ERG mouse.ABS eat-PRF   mouse.ABS DEM see-PRF

      Intended: 'I saw the mouse that the cat ate.'

(17) a. *Ye' tö [be' tö **ù** sṹ] **ù** e' yö'.
        I ERG you ERG house.ABS see-PRF house.ABS DEM build-PRF

      Intended: 'I built the house that you saw'

    b. [Be' tö **ù** sṹ] ye' tö **ù** e' yö'.
        you ERG house.ABS see-PRF   I   ERG house.ABS DEM build-PRF

      'I built the house that you saw'

Regarding the presence or absence of the head noun, as we discussed in Section 3, IHRCs cannot occur with an external head noun, as in (18) below; whereas correlatives occur with both an internal and external head noun, as in (16a) and (17b) above.

Such structures have not been reported or elicited for Bribri, so this test is unavailable. Moreover, given that Bribri relatives do not have a relative pronoun or relativizer, we do not expect to find any instance of such a construction.

(18) *Ye' tö [be' tö **ù** sú] **ù** e' yö'.
     I   ERG you ERG house.ABS see-PRF house.ABS DEM build-PRF

    'I built the house that you saw'   (Coto-Solano 2009:475)

As for the demonstrative requirement, correlative clauses in Hindi must have a demonstrative pronoun in the main clause. This is also true of the Bribri correlative. In IHRC constructions, however, demonstrative pronouns in the main clause are optional, as in (19), whereas omitting the demonstrative pronoun makes the correlative ungrammatical, as shown in (20b).

(19) [Aláköl kie   María] [$_{DP}$ ∅] dör buáala.
      woman call-PERF María   COP pretty

    'The woman who called María is pretty.'

(20) a. [Aláköl kie   María] [$_{DP}$ aláköl **e'**] dör buáala.
        woman call-PERF María   woman DEM COP pretty

       'The woman who called María is pretty'

    b. *[Aláköl kie   María] [$_{DP}$ aláköl ∅] dör buáala.
        woman call-PERF María   woman   COP pretty

       Intended: 'The woman who called María is pretty.'

Finally, let's examine the quantificational restrictions on Bribri correlatives. Correlatives tend to "maximalize" the semantics of the head noun in Hindi, leading to connotations of uniqueness or maximal encompassment (Grosu and Landman 1998). This is also true for many Bribri correlatives, as they reject quantifiers in the main clause that select a subset of the internal head. Example (21) shows the contrast between IHRCs and correlative constructions using the quantifier *kè sḗra* 'not all, few'.

(21) a. *IHRC*

    [Ala'r   tö   ni̱mà   katéke̱] [$_{DP}$ **kè̀** **sḗra** e'pa] tú̱n   sulûë.
     child-PL ERG fish.ABS eat-RP   NEG many DEM.PL run.IPFV fast-very

    'Not all of the children who ate fish run fast.'

    b. *Correlative*

    *[Ala'r   tö   ni̱mà   katéke̱] [$_{DP}$ **kè̀** **ala'r** sḗra e'pa] tú̱n
      child-PL ERG fish.ABS eat-RP   NEG children many DEM.PL   run.IPFV

      sulûë.
      fast-very

    Intended: 'Not all of the children who ate fish run fast.'

Example (22) shows the same contrast with the quantificational classifier *ből* "two.HUMAN".

(22) a. *IHRC*

?[Ala'r   tö   n<u>i</u>mà   katéke̱] [DP e'pa   **ből**   ] tṹn   sulûë.
   child-PL ERG fish.ABS eat-RP   DEM.PL two.HUMAN   run.IPFV fast-very

'Two of the children who ate the fish run fast.'

b. *Correlative*

*[Ala'r   tö   n<u>i</u>mà   katéke̱] [DP **ala'r**   e'pa   **ből**   ] tṹn
  child-PL ERG fish.ABS eat-RP   child-PL DEM.PL   two.HUMAN   run.IPFV

   sulûë.
   fast-very

Intended: 'Two of the children who ate the fish run fast.'

There are differences in the quantificational semantics of the IHRCs and the correlatives, but it is not clear that this difference is "maximal encompassment". In Hindi the quantifier *sab* 'all' is accepted in the correlatives (see example (14) above) but its Bribri equivalent, *ulít<u>a</u>ne̱*, is acceptable in the Bribri IHRC in (23a), but only partially acceptable in the correlative in (23b).[6]

(23) a. *IHRC*

[Ala'r   tö   n<u>i</u>mà   katéke̱] [DP e'pa   **ulít<u>a</u>ne̱**] tṹn   sulûë.
 child-PL ERG fish.ABS eat-RP   DEM.PL all   run.IPFV fast-very

'All of the children who ate the fish run fast.'

b. *Correlative*

?[Ala'r   tö   n<u>i</u>mà   katéke̱] [DP **ala'r**   e'pa   **ulít<u>a</u>ne̱**] tṹn
  child-PL ERG fish.ABS eat-RP   child-PL DEM.PL   all   run.IPFV

   sulûë.
   fast-very

'All of the children who ate the fish run fast.'

Given the results of these syntactic tests, there is good reason to think that Bribri has two

---

[6]Bribri accepts the correlative structure in (iiia), where the demonstrative is not present. This might be a case of a null demonstrative, as in the Hindi structures with *sab* 'all' (Srivastav 1991). Notice that excluding the demonstrative from the sentence does not improve the acceptability of non-maximal quantifiers, such as *ből* 'two.HUMAN', as shown in (iiib).

(iii) a. *Correlative with quantifier 'all', without a determiner*

[Ala'r   tö   n<u>i</u>mà   katéke̱   ] [DP **ala'r**   **ulít<u>a</u>ne̱**] tṹn   sulûë.
 child-PL ERG fish.ABS eat-PERFREC   child-PL all   run.IPFV fast-very

'All of the children who ate the fish run fast.'

b. *Correlative with quantifier 'two', without a determiner*

*[Ala'r   tö   n<u>i</u>mà   katéke̱] [DP **ala'r**   **ből**   ] tṹn   sulûë.
  child-PL ERG fish.ABS eat-RP   child-PL two.HUMAN   run.IPFV fast-very

Intended: 'Two of the children who ate the fish run fast.'

different relativization strategies, IHRCs and correlative clauses. In the next section will discuss possible syntactic analyses of Bribri correlatives.

4 Generation of Bribri correlatives

In Section 3 we have shown that the proposed Bribri correlative structures are similar to those in Hindi in that: (i) they appear in a peripheral position, (ii) they occur with an internal and external head noun, (iii) they must have a demonstrative pronoun in the main clause, and (iv) they have differences in their quantificational readings. Studies on Hindi correlative structures have proposed three main analyses for those structures: (a) non-local IP-adjunction; (b) demonstrative adjunction; and (c) IP-adjunction via movement (left dislocation) (Bhatt 2003; Davison 2009; Dayal 1996; Srivastav 1991).

There is evidence in the Bribri data that the correlative clause must surface adjoined to the IP/CP (i.e. peripheral position), and not adjoined to DP, as shown in (16), repeated here as (24). IHRCs, on the contrary, can occur at the left edge of the ergative or the absolutive positions in the main clause, as shown in the examples in Section 2 above.

(24) * Ye' tö [_XP pûs tö **skué**   kata'] **skué**   e' sú.
      I   ERG   cat ERG mouse.ABS eat-PRF   mouse.ABS DEM see-PRF

      Intended: 'I saw the mouse that the cat ate.'

We have further evidence that in IHRCs constructions the relative clause does form a constituent with the DP. As can be seen in (25), the answer to a question involving a relativized head in a IHRC construction includes both the relative clause and the determiner. However, we currently have no evidence of whether the correlative clause formed a constituent with the DP at any point of the derivation, so we are currently unable to determine whether the non-local IP-adjunction or the IP-adjunction via movement analyses better account for the structure of Bribri correlatives.

(25) a. *IHRC construction*

         [Pûs tö **skué**   kata'] e' kie   Nini.
           Cat ERG mouse.ABS eat-PRF   DEM call-PRF Nini

         'The mouse that the cat ate is called Nini.'

      b. *Question and answer*

         Ì   kie   Nini? – [**Skué** katéw̲a pûs tö   ] e'.
         What call.PRF Nini   mouse eat.RP cat ERG   DEM

         'Who is called Nini?' – 'The mouse that the cat was eating.'

Further tests need to be performed to check for movement, to better understand the differences in syntactic structures between Bribri IHRCs and correlatives (for Hindi, see Bhatt (2003)).

5 Correlatives and double-headed constructions in the Americas

The World Atlas of Linguistic Structures (Dryer and Haspelmath 2011) reports only two Indigenous languages of the Americas with correlatives, Quechua and Sanumá, and it reports none with the

double-headed construction. Lipták (2009) reports one language with correlatives, Quechua, and Vries (2002) reports three: Diegueño, Mohave and Wappo. Correlative structures are very likely being under-reported amongst languages in this region of the world, or not being reported under that name. For example, Gavião, a Tupí language from the Brazilian Amazon (Moore 2006, 2012) has structures where the head noun appears twice, as shown in (26), but they are not given a specific name and are only described as having "an internal nucleus [...] and an external nucleus identical to the internal nucleus" (Moore 2006:140).

(26) a. [**ávilɨ** pí ánéè pa-záp sígɨ mát] **ávilɨ**
            dog trail AUX.PAST.DEF.NOM 1PL-house close NMNLZ.CONCRETE dog

           máà paderè va-á.
           AUX.PAST person bite-END

           'The dog whose trail was close to our house bit someone'   (Moore 2006:141)

    b. [natáó ká eé-néè **sep** ígí mát]
            Christmas in 2S-AUX.PAST.DEF.NOM paper.OBJ take NMNLZ.CONCRETE

           sep íkinì matẹ́é ẹ̀t kɨ́-gáre-ále-á.
           paper.OBJ see CAUS 2S.AUX.IMP.DEF again-yet-FUT-end

           'Show us the pictures that you took on Christmas'   (Moore 2006:140)

Would the structure above be an example of a correlative, or do its nominalizing morphemes make it a double-headed construction like that described solely for Kombai (Cinque 2011; Vries 1993)? It is important to mention that, other than the non-finite nature of the Kombai verbs in the internal clause, as well as the absence of the demonstrative pronoun in the main clause, it is not clear what the syntactic differences would be between the Kombai and the Bribri structures. Furthermore, there are identifiable similarities between the structures beyond the presence of the two nouns. For example, one of the defining features of the Kombai construction is that "while the two nouns are sometimes the same, [...] the external noun is usually more general than the one inside the relative clause [...], where the external noun is simply *ro* 'thing'" (Dryer 2013). Example (27a) shows such a Kombai structure. A similar Bribri structure is shown in (27b), where the more general noun *wĕm* 'man' is the correferent in the main clause of *yĕria* 'hunter'.

(27) a. *Kombai*

       [**gana** gu fali-kha] **ro.**
         bush.knife 2SG carry.go-2SG.NONFUT thing

       'The bush knife that you took away'   (Vries 1993:77)

    b. *Bribri*

       [**Yĕria** dör Juan él] **wĕm** e' dör bua'ë.
         hunter COP Juan brother man DEM COP good-very

       'The hunter who is Juan's brother is very good.'

Future research must attempt to identify more relative structures in underdocumented languages of the Americas, where head nouns can appear in both the relative and the main clause, and which

might behave similarly to correlatives. Also, this research should help dilucidate the potential differences between correlatives and the double-headed relatives, if those differences exist.

6   Conclusions and future research

In this paper, we have shown evidence of the existence of two distinct relativization strategies in Bribri: Internally-headed relative clauses and correlative clauses. There are clear differences in the syntactic behavior of these two structures regarding position relative to the main clause, use of determiners and quantification.

Future work must focus on other tests to further distinguish between these two relativization strategies, and determine the internal syntactic structure of the relative and main clauses, as well as the properties of their connection. For example, is the Bribri correlative an IP, or is it a CP as in Hindi? Does the head of the IHRC have an operator binding the sentence to the DP (Basilico 1996; Kubota and Smith 2007; Watanabe 1992), and is this operator present or absent in the correlative? Are there any semantic differences other than quantification between the two structures?

One potential area of research is to investigate their prosodic differences. A preliminary examination of the time ellapsed between the last syllable of a relative clause and the first syllable of the main clause revealed that correlative structures have significantly longer pauses, 16 ms versus 11 ms for the time between an IHRC and its main clause ($F(2,12)=5.44$, $p<0.025$), However, IHRCs without determiners (as in (19)) have a significantly longer pause than correlatives, taking 25 ms until the first syllable of the main clause. These differences, along with intonational differences and the role of other phonetic cues must be examined in depth.

Future work will also examine whether the correlative structure exists in other Chibchan languages in Costa Rica. Chibchan has been described as a family where relative clauses are "rare" (Quesada 2007:81). However, Cabécar and Térraba, two languages closely related to Bribri, also have IHRCs (Constenla 2007; Margery Peña 2003) as shown in (28), leaving open the possibility to find correlative structures in them.

(28)   a.   *Cabécar*

[jayéwa súg̲u̲tö déljṵ   ] ∅ jé   rö   yís el.
   man   last   arrive-PRF   DEM COP I   brother

'The man that arrived last is my brother.'   (Margery Peña 2003:269)

   b.   *Térraba*

[huaŕé   coň sombréro t'uórob   fë   ] ∅ co   Carmen.
   woman to   hat   give-PRF-2SG REL   call-PRF Carmen

'The woman you gave the hat to is called Carmen.'   (Constenla 2007:138)

In summary, there might be many more correlatives out there, especially among the languages of the Americas.

7   Acknowledgments

their helpful comments at various stages of this project, as well as the organizers and presenters of WSCLA 2015 conference for their valuable feedback.

References

Alexiadou, A., Law, P., Meinunger, A., and Wilder, C. (2000). *The Syntax of Relative Clauses*. Volume 32, John Benjamins Publishing.

Basilico, D. (1996). Head Position and Internally Headed Relative Clauses. *Language*, pages 498–532.

Bhatt, R. (2003). Locality in Correlatives. *Natural Language & Linguistic Theory*, 21(3):485–541.

Bickel, B., Comrie, B., and Haspelmath, M. (2008). The Leipzig Glossing Rules. Conventions for Interlinear Morpheme by Morpheme Glosses. *Revised version of February 2008*.

Cable, S. (2009). The Syntax of the Tibetan Correlative. In Lipták, A., editor, *Correlatives Cross-Linguistically*, pages 195–222. Amsterdam: John Benjamins Publishing.

Cinque, G. (2011). On Double-Headed Relative Clauses. *Linguística: Revista de Estudos Linguísticos da Universidade do Porto*, 6(1).

Constenla, A. (2007). *La Lengua de Térraba*. San José, Costa Rica: Editorial de la Universidad de Costa Rica.

Constenla, A., Elizondo, F., and Pereira, F. (1998). *Curso Básico de Bribri*. San José: Editorial de la Universidad de Costa Rica.

Coto-Solano, R. (2009). Reanálisis de las Cláusulas Relativas en la Lengua Bribri como un Caso de Linearización en la Teoría Minimalista. In *Memoria del II Congreso Internacional de Lingüística Aplicada (CILAP). September 2009*, pages 468–478. Heredia, Costa Rica: Universidad Nacional.

Coto-Solano, R. (2015). The Phonetics, Phonology and Phonotactics of the Bribri Language. Paper presented at the 2nd International Conference on Mesoamerican Linguistics. California State University, Los Angeles.

Davison, A. (2009). Adjunction, Features and Locality in Sanskrit and Hindi/Urdu correlatives. In Lipták, A., editor, *Correlatives Cross-Linguistically*, pages 223–262. Amsterdam: John Benjamins Publishing.

Dayal, V. (1996). Quantification in Correlatives. In Bach, E., Jelinek, E., Kratzer, A., and Partee, B., editors, *Quantification in Natural Languages*, pages 179–205. Springer.

Dryer, M. (2013). Order of Relative Clause and Noun. In Dryer, M. S. and Haspelmath, M., editors, *The World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology.

Dryer, M. and Haspelmath, M. (2011). The World Atlas of Language Structures Online. Max Planck Digital Library. *Online: http://wals.info*.

Grosu, A. and Landman, F. (1998). Strange Relatives of the Third Kind. *Natural Language Semantics*, 6(2):125–170.

Heath, J. (2008). *A Grammar of Jamsay*. Volume 45. Walter de Gruyter.

Instituto Nacional de Estadística y Censo (2013). *X Censo Nacional de Población y VI de Vivienda 2011: Territorios Indígenas, Principales Indicadores Demográficos y Socioeconómicos*. San José, Costa Rica: INEC.

Kayne, R. S. (1994). *The Antisymmetry of Syntax*. Number 25 in Linguistic Inquiry Monographs. MIT Press.

Keenan, E. L. (1985). Relative Clauses. *Language Typology and Syntactic Description*, 2:141–170.

Kubota, Y. and Smith, E. A. (2007). The Japanese Internally Headed Relative Clause is not an E-Type Pronoun. In Miyamoto, Y. and Ochi, M., editors, *Proceedings of Formal Approaches to Japanese Linguistics*, volume 4, pages 149–60.

Lipták, A. (2009). The Landscape of Correlatives. In Lipták, A., editor, *Correlatives Cross-Linguistically*, page 1. Amsterdam: John Benjamins Publishing.

Mahajan, A. (2000). Relative Asymmetries and Hindi Correlatives. In Alexiadou, A., Law, P., Meinunger, A., and Wilder, C., editors, *The Syntax of Relative Clauses*, pages 201–229. Amsterdam: John Benjamins Publishing.

Margery Peña, E. (2003). *Diccionario Cabécar-Español Español-Cabécar*. San José, Costa Rica: Editorial de la Universidad de Costa Rica.

Moore, D. (2006). Relative Clauses in Gavião of Rondônia. *Boletim do Museu Paraense Emílio Goeldi. Ciências Humanas*, 1(1):135–143.

Moore, D. (2012). Relative Clauses in Gavião of Rondônia. In Comrie, B. and Fernández, Z. E., editors, *Relative Clauses in Languages of the Americas: A typological overview*, volume 102 of *Typological Studies in Language*, pages 243–252. Amsterdam: John Benjamins Publishing.

Moseley, C. (2010). *Atlas of the World's Languages in Danger, 3rd ed.* Paris, UNESCO Publishing.

Quesada, J. D. (2007). *The Chibchan Languages*. Editorial Tecnológica de Costa Rica.

Sánchez Avendaño, C. (2013). Lenguas en peligro en Costa Rica: Vitalidad, documentación y descripción. *Káñina*, XXXVII(1):219–250.

Srivastav, V. (1991). The Syntax and Semantics of Correlatives. *Natural Language & Linguistic Theory*, 9(4):637–686.

Villalobos, M. E. (1994). Bribri, Lengua con Cláusulas Relativas de Núcleo Interno. *Letras*, 29-30:225–239.

Vries, L. d. (1993). *Forms and Functions in Kombai, an Awyu language of Irian Jaya*. Number 108 in Pacific linguistics. Series B. Department of Linguistics, Research School of Pacific Studies, Australian National University.

Vries, M. d. (2002). *The Syntax of Relativization*. Landelijke Onderzoekschool Taalwetenschap.

Wali, K. (2006). *Marathi: A Study in Comparative South Asian Languages*. Indian Institute of Language Studies.

Watanabe, A. (1992). Subjacency and S-structure Movement of Wh-in-situ. *Journal of East Asian Linguistics*, 1(3):255–291.

Wilson, J. (1984). Relative Clauses in Bribri. *Estudios de Lingüística Chibcha*, 5:59–84.