The syntax of correlatives in Isbukun Bunun

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Abstract

This paper investigates the correlative construction in Isbukun Bunun, an Austronesian language spoken in Taiwan. I show that in this language the correlative clause and its associated anaphoric element do not form a constituent at any point in the derivation. Drawing on evidence from island-insensitivity, the absence of Condition C effects and non-constituency facts, I propose that the syntactic relation between the correlative clause and the nominal correlate is derived by a base-generated adjunction structure. Moreover, I argue that the correlative clause, which behaves as a generalized quantifier, binds the nominal correlate phrase in the matrix clause, which is construed as a bound variable. The proposed quantificational binding view is further shown to capture the types of correlate phrases allowed in Isbukun Bunun correlatives.

Keywords: correlatives, Isbukun Bunun, Austronesian languages, base-generation, adjunction

Résumé

Cet article étudie la construction corrélative de l'Isbukun Bunun, une langue austronésienne parlée à Taiwan. Je démontre que la proposition corrélative et l'élément anaphorique avec lequel elle est associée ne forment pas un constituant dans cette langue. En raison de l'absence de la sensibilité aux îlots, de l'absence des effets de la Condition C et de l'absence de la constitution syntaxique, je propose que la relation entre la corrélative et le corrélat nominal est dérivée par l'adjonction dans une position de base. En outre, je propose que la corrélative, dont le comportement est similaire à celui d'un quantificateur généralisé, lie le corrélat nominal dans la proposition principale lequel est interprété comme une variable liée. Cette analyse explique les types de corrélats qui sont autorisés dans la langue.

Mots-clés: corrélative, Isbukun Bunun, langues austronésiennes, position de base, adjonction

1. INTRODUCTION

The term *correlative construction* refers to a type of relativization strategy in which a left-peripheral relative clause is linked to a nominal correlate in the matrix clause that follows the relative clause. This non-local relativization strategy has a remarkably broad distribution among languages of the world, though they are better known in the ancient Indo-European languages like Sanskrit, Latin, Greek and Hittite (Haudry 1973) and in modern Indo-Aryan languages like Hindi (Srivastav 1991, Dayal 1996, Bhatt 2003). Sentence (1) presents a typical example of Hindi correlatives, which have been extensively studied in the literature (Srivastav 1991, Dayal 1995, Bhatt 2003).[1]

(1) *Hindi correlatives*
  [CP jo   CD   sale-par hai], Aamir us   CD-ko khari:d-ega:.
       REL   CD   sale-on   be   Aamir that CD-ACC buy-FUT.M.SG
       'Aamir will buy the CD that is on sale.'
  Lit. 'Which CD is on sale, Aamir will buy that CD.'   (taken from Bhatt 2003)

Semantically, the correlative clause in (1) is reported to have two possible interpretations. First, it admits of a kind of 'universal' reading, which can be paraphrased as 'Aamir will buy whatever/whichever CD that is on sale.' In addition, it can also be taken to carry a 'definite' interpretation such that there is a particular entity of CD that is on sale and Aamir wants to buy it. Syntactically, as we can see in example (1), the left-peripheral clause, which contains a relative or *wh*-operator, is linked to the main clause by a correlate, a nominal expression. The latter, *us CD-ko* 'that CD' in (1), picks out the same referent as the preceding adjunct clause and occupies an argument slot. The syntactic schema of a correlative construction can thus be presented as in (2):

(2) *The structure of correlatives*
  [CorCP…*wh*-XP$_i$ …]$_i$ [IP…correlate-XP$_i$ …]

In previous investigations of correlativization, it has been demonstrated that the exact syntactic operation and semantic representation involved in correlatives may vary across languages (see Lipták 2009 for a collection of language-particular studies). Along this line of inquiry, the current study aims to analyse the Isbukun Bunun correlative construction, in the hope of extending the empirical and theoretical scope of previous research. In particular, I propose that in Isbukun Bunun the correlative clause is base-generated in the left periphery, linked to a nominal correlate in the main clause. Moreover, the correlative clauses of Isbukun Bunun are shown to display the same ambiguity of definiteness and indefiniteness associated with Dayal's (1996) proposal that correlatives are generalized quantifiers.

  If the data and analysis presented in this paper hold, this study has interesting implications for the relevant typological literature. It has been noted that correlative

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[1]Abbreviations used in this paper that are not found in the Leipzig Glossing Rules are av, actor voice; pv, patient voice; lv, locational voice; bv, beneficiary voice; lnk, linker. Unless otherwise noted, the data cited in this paper come from the author's own fieldwork notes.

constructions are limited to (loose) verb-final languages (Keenan 1985, following Downing 1973); given that Isbukun Bunun is a verb-first language, the typological view might need to be modified. On the other hand, the findings in Isbukun Bunun also provide evidence for a correlativization strategy that is partly different from that in Indo-Aryan languages, and constitutes a pattern that has not yet been uncovered in other languages. Specifically, the peculiarity of Isbukun Bunun correlatives is their greater flexibility in allowing a wider range of anaphoric elements than other languages like Hindi-Urdu. It will be demonstrated that the generalized quantifier account provides a proper way of characterizing this cross-linguistic variation.

   The paper is structured as follows. In section 2 I provide some background on Isbukun Bunun and describe the basic characteristics observed in the Isbukun Bunun correlative construction. Section 3 motivates the existence of correlatives in Isbukun Bunun and provides a syntactic account of this construction. Section 4 discusses the semantic properties of Isbukun Bunun correlatives and section 5 concludes the paper.

2. BASIC PROPERTIES OF ISBUKUN BUNUN AND ITS CORRELATIVE CONSTRUCTION

Bunun is one of the Formosan languages spoken in Taiwan. Throughout this paper I confine my attention to the dialect of Bunun known as Isbukun Bunun and I use the term 'Isbukun' to refer to this particular Bunun dialect.[2] In particular, the current study is based on the Isbukun dialect spoken in Taitung County.

   Isbukun Bunun is predicate-initial, and has two NP case markers (see He et al. 1986, P. J.-K. Li 1997, Huang 1997, Jeng 1999, Zeitoun 2000). The nominative marker is *a* and the non-nominative, or oblique, one is *mas*.[3] As can be seen in (3a), both of them can be omitted in colloquial speech. When not omitted, they are placed immediately before the NP, as in (3b).

(3) a. Ma-ludah   Tahai   Aping.
         AV-beat   Tahai   Aping
          'Tahai beats Aping.'

     b. M-in-aun   a   Tahai   mas   utan.
         AV<PFV>eat   NOM   Tahai   OBL   sweet.potato
          'Tahai ate sweet potatoes.'

   Though the case system for NPs is somewhat impoverished in Isbukun Bunun, the case paradigm for personal pronouns is complete and case specification is obligatory for pronouns. Table 1 provides the complete list; examples are given in (4).

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[2]Bunun can be subdivided into five dialects: Takituduh, Takbanuaz, Takibakha, Takivatan, and Isbukun. For a comparative study on Bunun dialects, see P. J.-K. Li (1988), where phonological and lexical differences among the five dialects are described.

[3]The algorithm for Isbukun clause-level case assignment works as follows: if a NP is the grammatical subject, it is nominative; if it has the thematic role of location, it is locative; otherwise it bears oblique case.

Number	Person	Nominative		Accusative/Oblique		Genitive	Locative
		free	*bound*	*free*	*bound*		
Singular	1st	saikin	-ik	zaku	-ku	(i)nak	zakuan
	2nd	kasu	-as	suu	-su	(i)su	suan
	3rd	sain	N/A	saicin/saitan	N/A	(i)saitan	saincin/saintan
	near	saia		saicia		(i)saicia	saincia
	far						
Plural	1st incl.	kata	-ta	maita/mita	-ta	(i)mita	mitan
	excl.	kaimin	-im	zami/mazami		(i)nam	zamiancin
	2nd	kamu	-am	mu/mamu	-mu	(i)mu	muuan
	3rd	nain	N/A	naitan	N/A	(i)naitan	naiancia
	near	naia		naicia		(i)naicia	naiancia
	far						

Table 1: Personal pronouns (adapted from Jeng (1999))

(4) a. H-in-uud   saikin   davus
         AV<PFV>drink   1SG.NOM   wine
         'I drank the wine.'

     b. Ma-ludah   kasu   zaku
         AV-beat   2SG.NOM   1SG.OBL
         'You beat me.'

Like personal pronouns, demonstrative pronouns can also be marked with their associated case,[4] as shown in Table 2 and example (5).

(5) Manah   bunun-an   tulkul-tan
     AV.shoot   person-this.NOM   chicken-this.OBL
     'This man shot the chicken (here).'

Like many other Formosan and Western Austronesian languages, Isbukun Bunun permits a range of arguments to serve as the syntactically most prominent NP, marked by the *a* nominative case marker of the clause. Such an *a*-marked phrase has been known by a number of names in the Austronesian literature,

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[4]There are other demonstratives that can stand alone and do not carry case-marking in their form, such as *adi* 'this' and *adaiza* 'that'.

(i) Adi   sapalan hai inak   tu   asabahan.
     this bed   TOP 1SG.GEN   LNK   sleeping.place
     Lit. 'This bed is my sleeping place.'

(ii) Adaiza puah   hai mastan ma'ansum.
     that   flower   TOP more   fragrant
     'That flower is more fragrant.'

	Nominative	*Oblique*
Near	-in / -an	-cin / -tan
Far	-a	-cia

Table 2: Demonstrative pronouns

including "subject", "topic", and "pivot" – here I will refer to it as the *subject* for ease of presentation, though this term should be regarded with caution. The syntactic subject relation can be borne by a wide range of arguments: not only by the external argument (the actor), but also by noun phrases bearing semantic roles such as patient, theme, goal, benefactive and instrument. Importantly, all verbs in Bunun must be inflected with their associated morphology marker; that is, the semantic role or grammatical function of the surface subject has to be encoded on the verb.[5] Example (6) gives the voice marking system in Isbukun Bunun.[6]

(6) a. *Actor: ma-, m-, Ø*
         m-aun   a   Tahai   mas   acipul-tan   laupaku.
         AV-eat NOM Tahai OBL   corn-this.OBL   now
         'Tahai is eating corn now.'

     b. *Patient: -un*
         kaun-**un**-in   a   acipul-a   mas   Tahai.
         eat-PV-PFV   NOM corn-that. NOM OBL   Tahai
         'That corn has been eaten by Tahai.'

     c. *Locational phrase: -an*[7]
         na-sabah-**an**   adi   lumah   mas   Tahai   aip.
         FUT-sleep-LV   this   room   OBL   Tahai   today
         'This room will be slept in by Tahai today.'

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[5]In the literature the marking is often called either voice marking or case morphology and there has been a major ongoing debate on its nature. See Guilfoyle, Hung, and Travis (1992), Chang (1997), Rackowski and Richards (2005), Pearson (2005), Aldridge (2004) among many others. In the following discussion, I assume the structural approach, and adopt the voice terminology simply because it permits a reasonably simple presentation of my arguments in a manner consistent with other current work.

[6]For more examples and details on the voice system of Isbukun, see Jeng (1999).

[7]The particle *na* signals that the event will take place in the future. Note especially that *na* is not an affix but rather an independent stem; it can precede not only verbal elements but also phrases of other categories (e.g., nouns and adverbs), as illustrated below.

(i) ma-baliv   saikin   mas   na   kaunun
     AV-buy   1SG.NOM OBL   FUT eatable
     'I am buying things to eat.'

(ii) Dahu hai miliskin tu   na   aip   ma-baliv lumah-cia.
     Dahu TOP AV.plan LNK FUT today AV-buy   house-that.OBL
     'Dahu plans to buy that house today.'

    d. *Benefactive phrase: is-*
       is-baliv a̲   T̲a̲h̲a̲i̲ mas ahil-tan.
       BV-buy N̲O̲M̲ T̲a̲h̲a̲i̲ OBL book-this.OBL
       'This book is bought for Tahai.'

Furthermore, as in many Austronesian languages (Chang 1997, Richards 2000, Rackowski 2002, Aldridge 2004, Pearson 2005), Ā-extraction in Isbukun, including *wh*-construction formation and relativization, is restricted to the nominative-marked argument, obeying the so-called subject-only restriction (Keenan and Comrie 1977). This extraction restriction is illustrated in the interrogative paradigm of (7).[8]

(7) *The subject-only restriction*

    a. Ma-i-baliv a Dahu mas tulkuk.
       AV<PFV>buy NOM Dahu OBL chicken
       'Dahu bought the chicken.'

    b. Sima ma-i-baliv tulkuk?
       who AV< PFV>buy chicken
       'Who bought the chicken?'

    c. *Maaz ma-i-baliv a Dahu?
       what AV< PFV>buy NOM Dahu
       Intended: 'What did Dahu buy?'

    d. Maaz baliv-un mas Dahu?
       what buy.PV OBL Dahu
       'What did Dahu buy?' = 'What is bought by Dahu?'

Example (7c) is ungrammatical since it involves argumental extraction of the patient/ theme object, namely a non-subject; however, note that, as shown in (7d), once this object is promoted to be the surface subject, as reflected by the verbal morphology, Ā-extraction in question becomes legitimate again. In other words, only the subject can undergo Ā-operation but not the object. Similar restrictions are attested in relativization as well. Like numerous languages, Isbukun Bunun has embedded headed relatives, in which the nominal is construed as the head of relativization. As shown in (8), headed relatives in Isbukun Bunun are always prenominal and

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    [8]Like Malagasy and Tagalog (Kroeger 1993, Aldridge 2004), Isbukun Bunun permits PPs that clearly are not subjects to undergo fronting. As shown in the examples below, a PP has been fronted from a clause with a distinct subject (i.e., Dahu) in the clause:

  (i) Lakua Dahu ma-i-baliv mas tulkuk?
      when Dahu AV<PFV>buy OBL chicken
      'When did Dahu buy the chicken?'

  (ii) (Ini-)isa Dahu ma-i-baliv mas tulkuk?
      (from-)where Dahu AV< PFV>buy OBL chicken
      'Where did Dahu buy the chicken?'

It seems that adjuncts, unlike arguments, enjoy a certain freedom in terms of extraction. As will be seen in (9), similar patterns are available in correlatives, where in general only subjects can be relativized though adjuncts seem to be immune to extraction restrictions. More investigation is needed into these intriguing patterns in Austronesian languages.

such a relative clause is linked to its modified noun by the associative linker *tu*.[9] Crucially, similar to the restrictions observed earlier, only the subject can be relativized: (8b) is ruled out since the head noun *ahil-an* 'this book' is an object that has been relativized and extracted.

(8) a. Sa-i-du-an-ku   a   b-in-aliv   mas cina tu   ahil-an.
         see<PFV>LV-1SG.OBL NOM buy<PFV> OBL   mom LNK book-this.NOM
         'I have seen the book Mother bought.'

    b. *Sa-i-du-an-ku   a   ma-i-baliv   cina tu   ahil-an.
         see< PFV>LV-1SG.OBL NOM AV<PFV>buy mom LNK   book-this. NOM

I turn now to the focus of this study, the correlative construction in Isbukun.

Generally speaking, a correlative construction is composed of a correlative clause and a matrix clause. The correlative clause, which is an adjunct CP, contains a relative or *wh*-operator, and the matrix clause contains an anaphoric element associated with the correlative clause. For ease of exposition, in the following discussion we refer to the adjunct CP in a correlative construction as the correlative CP and the anaphoric noun phrase as the anaphoric nominal. Sentences exemplifying the correlative construction in Isbukun are provided in (9).[10]

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[9]The distribution of the 'linker' *tu* is wider than that of *'s* in English. Specifically, in addition to serving as a linker in possession relation, *tu* can also link a demonstrative, a numeral, an adjective phrase, and a relative clause to the modified noun. For languages that have both headed relatives and correlatives, as pointed out in Srivastav (1991) and Bhatt (2003), the correlative strategy and the headed strategy are very different; therefore, the two constructions are not considered to be transformationally related and derived from the same underlying base. Several syntactic properties can distinguish the two. For instance, headed relative clauses generally do not allow repetition of the head noun inside the relative clause while the head NP can be repeated inside the correlative clause. Such a distinction is attested in Isbukun Bunun as well.

(i) ludah-un   ma-tushung   (*bunun) uvaaz tu   bunun   mas Alang.
    beat-PV   AV-bully   person   child LNK person OBL Alang
    'Alang beat the person who (*the person) bullies children.'

(ii) Sima   ma-tushung   uvaaz,   na   *(sima)   ludah-un-ku.
     who   AV-bully   child   FUT   who   hit-PV-1SG.OBL

Following the insight of previous works, I regard the two constructions as distinct, and focus on correlative clauses. For English-type headed relatives, I adopt Wu's (2014) view that the associative marker *tu* is a complementizer and the relative structure it introduces should be accommodated under the adjunction analysis.

[10]*Hai* is a particle that marks the preceding element as the topic of the sentence. The use of *hai* in correlatives is optional and when *hai* appears, the preceding correlative clause is construed as an "aboutness topic" (Dayal 1996). Since aboutness topics need not carry old information (Reinhart 1981), the correlative CP can refer to given information as well as discourse-new information. For example, (9a) can be foregrounded in the conversation if some person(s) who tend to bully children were mentioned in the discourse; (9a) can enter the conversation if people who bully children are not previously mentioned but the speaker simply wishes to express animosity towards such people. Crucially, the possibility of having the correlative

(9) *Isbukun Bunun correlatives*

  a. Sima ma-tushung uvaaz (hai), na ludah-un-ku saia tu bunun.
     who   AV-bully   child TOP   FUT hit-PV-1SG.OBL 3SG.NOM LNK person
     'I will hit the person who bullies a child' or 'I will hit whoever bullies a child.'
     Lit. 'Who bullies a child, that person will be hit by me.'

  b. Maaz suu   kazima-un (hai), na kahaitas-un-ku saia tu
     what 2SG.OBL like-PV   TOP   FUT hate-PV-1SG.OBL 3SG.NOM LNK
     luhi.
     (small)-animal
     'I will hate the animal which you like.' or
     'I will hate whatever animal you like.'
     Lit. 'What is liked by you, that animal will be hated by me.'

  c. Na   ku-isa   kasu   (hai), na   ku-saincia amin saikin.
     FUT to-where 2SG.NOM TOP   FUT to-there   also 1SG.NOM
     'I will go to the place where you go,' or 'I will go wherever you go.'
     Lit. 'Where you go, that place I also go.'

  d. Na   lakua kasu   mudan (hai), na   tudiip   mudan amin saikin.
     FUT when 2SG.NOM AV.go TOP   FUT that.time AV.go also 1SG.NOM
     'I will go at the time when you go,' or 'I will go whenever you go.'
     Lit. 'When you go, that time I also go.'

As can be observed in (9), several distinct properties, which have been argued to hold of correlatives cross-linguistically, can be found in the preceding Isbukun sentences. For one, an adjoined CP, occurring to the left of the matrix clause, always contains a *wh*-operator that relates to some corresponding nominal element in the matrix clause. This placement conforms to the general property that correlative CPs predominantly occur in the left periphery, in a position that is not necessarily adjacent to the anaphoric nominal expression (Dayal 1996). The Isbukun structure resembles the Hindi correlative example in (1) and is similar to the schematic representation in (2), repeated here as (10a) and (10b).

(10) a. [$_{CP}$ jo CD sale-par hai], Aamir us CD-ko   khari:d-ega:.
               REL CD sale-on be Aamir that CD-ACC buy-FUT.M.SG
          'Aamir will buy the CD that is on sale.'

      b. [$_{CorCP}$…*wh*-XP$_i$ …]$_i$ [$_{IP}$…correlate-XP$_i$ …]

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clause as an aboutness topic does not undermine the treatment of the whole correlative CP as a generalized quantifier. It has been noted (Rizzi 1997) that bare quantificational elements such as *no-one* and *all* cannot be topics. However, as pointed out by Rizzi, this restriction usually only holds with bare quantifiers. In other words, as long as there is some restriction or modification, quantifiers can be topicalized, as shown below (for details, see Rizzi 1997 and references therein). Now, since correlative CPs are not bare quantifiers, the possible occurrence of the topic marker is not surprising, though further investigation on the interaction of quantifiers and topics/focus is required. I thank one anonymous reviewer for pointing this out.

  (i) Molti libri, li ho buttati via.
      'Many books, I threw them away'.

Interestingly, while Isbukun is identical to the Hindi case in that its correlatives obligatorily have an anaphoric nominal in the matrix clause, it differs from Hindi in that the Isbukun correlative allows a *wh*-indefinite or a pronoun to serve as the anaphoric nominal correlate, instead of the demonstrative phrase.[11] Examples are given in (11).

(11) *More instances of Isbukun Bunun correlatives*

   a. Sima   ma-tushung uvaaz (hai), na   {sima/saia}   ludah-un-ku.
       who   AV-bully   child TOP   FUT who/3SG.NOM   hit-PV-1SG.OBL
       'I will hit the person who bullies a child,' or 'I will hit whoever bullies a child.'
       Lit. 'Who bullies a child, who/he will be hit by me.'

   b. Maaz   suu   kazima-un (hai), na   {maaz/sain}   kahaitas-un-ku.
       what   2SG.OBL like-PV   TOP   FUT what/3SG.NOM hate-PV-1SG.OBL
       'I will hate the thing which you like,' or 'I will hate whatever you like.'
       Lit. 'What is liked by you, what/it will be hated by me.'

   c. Na   ku-isa   kasu   (hai), na   ku-isa   amin   saikin.
       FUT   to-where 2SG.NOM   TOP   FUT to-where also   1SG.NOM
       'I will go to the place where you go,' or 'I will go wherever you go.'
       Lit. 'Where you go, where I also go.'

   d. Na   lakua kasu   mudan (hai), na   lakua amin saikin   mudan.
       FUT   when   2SG.NOM AV.go TOP   FUT when   also 1SG.NOM AV.go
       'I will go at the time when you go,' or 'I will go whenever you go.'
       Lit. 'When you go, when I also go.'

Thus it seems that although Isbukun and Hindi both require an anaphoric nominal expression in correlativization, the two differ in the types of elements that can serve such a function. In the following discussion, I refer to this phenomenon as the correlate requirement; we will return to this issue again in section 3 and discuss what groups the three types of NPs together in Isbukun correlatives.

   The Isbukun correlative can denote a kind of universal reading, but it also admits of a kind of definite reading. This fact is reflected by the English translation in (9) and

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[11]Hindi-Urdu correlatives display a well-known *demonstrative requirement*, which states that the main clause needs to have a demonstrative phrase correlate of the correlative clause, as demonstrated below.

(i) *Demonstrative requirement on Hindi correlatives*

   a. [CP jo   CD sale-par hai], Aamir [vo   CD] khari:d-ega:.
          REL CD sale-on be   Aamir DEM CD   buy-FUT.M.SG
       'Aamir will buy the CD that is on sale.'

   b. *[CP jo   CD   sale-par hai], Aamir [CD] khari:d-ega:.
           REL CD   sale-on be   Aamir CD   buy- FUT.M.SG
       Lit. 'Which CD is on sale, Aamir will buy CD.'

   c. *[CP jo   CD   sale-par hai], Aamir [koi/har   CD] khari:d-ega:.
           REL CD   sale-on be   Aamir some/every CD   buy- FUT.M.SG
       Lit. 'Which CD is on sale, Aamir will buy some/every CD.'

(11). That is, a sentence such as (11a) has a meaning analogous to 'I will hit anyone who bullies a child', which expresses the speaker's general wish to, say, protect children. On the other hand, given a context in which some child looks injured and there is a known, specific person who caused the injury, (11a) can also be uttered for the speaker to communicate that (s)he will hit that particular person as revenge. The availability of both a universal and a definite reading is also widely reported in the correlative literature, as mentioned earlier and observed in the Hindi example. Given these similarities, it seems to be well grounded to treat these Isbukun sentences on a par with the correlatives investigated in other languages.[12]

To recapitulate, I have shown that the treatment of sentences in (9) and (11) as correlativization is well grounded as the constructions under investigation conform to the properties generally observed in correlatives. After securing the correlative analysis to be on the right track, its relevant properties and structure will be examined in the following sections.

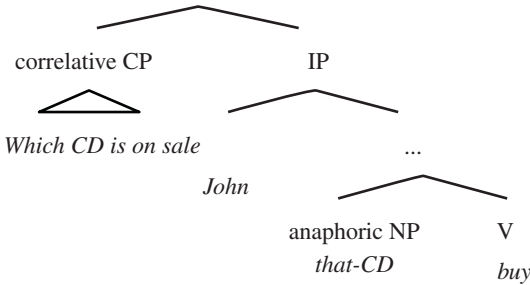## 3.   THE SYNTACTIC REPRESENTATION OF THE ISBUKUN CORRELATIVE

In the literature we find two basic types of approaches centering around the question of how the correlative clause syntactically combines with the main clause (Srivastav 1991, Dayal 1996, Izvorski 1996 and Bhatt 2003). The two plausible structures, differing along the line of positing base-generation vs. movement of the relative clause, are referred to as the *base-generated IP-adjunction approach* and *IP adjunction via movement approach* respectively in the following discussion.

The base-generated IP-adjunction approach, first defended extensively in Srivastav (1991) and Dayal (1996), assumes that the correlative CP is initially merged as an adjunct to the IP projection of the main clause, illustrated in (12). Crucially, the anaphoric nominal expression and the correlative CP do not form a constituent at any point in the derivation. Within this structure, the correlative CP

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[12]One might wonder whether the correlatives under discussion should be treated as a species of conditional. First, it should be noted that some previous studies have argued that the distinction between correlatives and conditionals is obscure (Hale 1976), especially given the formal semantics each typically receives (Bittner 2001). Therefore, the distinction does not seem to affect the Isbukun correlatives more than the correlatives in other languages. Second, a direct reduction of the Isbukun correlative to the conditional turns out not to be so straightforward. For example, the correlative CP and the antecedent of a conditional differ in the range of interpretations they allow. A theory under which the Isbukun correlative is an instance of conditional would fail to capture the possible readings of the construction. Specifically, as mentioned earlier, in addition to the universal reading, the definite construal (e.g., there is one single particular person that I will hit as in (11a)) is available to the Isbukun correlative. This cannot be paraphrased by the conditional statement and hence would not be readily captured under the conditional treatment. As a result, I leave the issue of whether conditionals are themselves a sub-species of correlatives (Bhatt and Pancheva 2006, Arsenijević 2009) to further investigation.
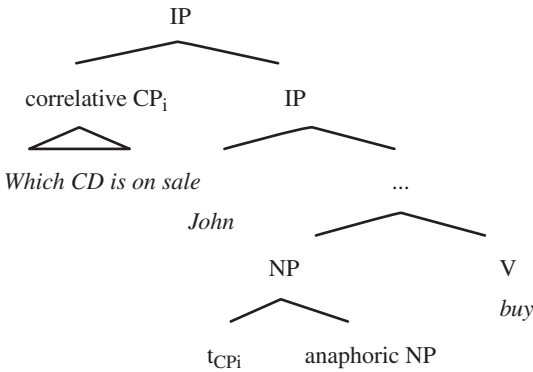
acts as a generalized quantifier and the anaphoric nominal as a variable, which is akin to an Ā-trace.

(12)   *Base-generation*

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            _____
      correlative CP          IP
         /‾‾‾‾‾‾\          _____
    Which CD is on sale        ...
                    John           _____
                          anaphoric NP    V
                            that-CD      buy
```

On the other hand, under the IP adjunction via movement approach (Bhatt 2003), the correlative CP is first merged as an adjunct to the nominal correlate it is associated with; subsequently, the correlative CP moves out of the projection containing the nominal correlate and adjoins to the matrix IP. The correlative CP thus modifies the correlate phrase locally by forming a complex structure with it in the base. From this low position, the correlative CP (optionally) moves out to adjoin to IP via an Ā-operation, illustrated in (13).[13]

(13)   *IP adjunction via movement*

```
                         IP
                   _____
          correlative CP_i           IP
             /‾‾‾‾‾‾\          _____
        Which CD is on sale        ...
                        John           _____
                              NP              V
                          _____         buy
                        t_CPi   anaphoric NP
```

In what follows, arguing from non-constituency facts, island effects and condition C effects, I contend that the non-local base-generation approach is the proper analysis of the Isbukun correlatives.

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[13]Note the picture of Hindi-Urdu correlatives described in this paper is not exhaustive but an expository abstraction; thus readers should be cautioned that the comparison of Isbukun Bunun and Hindi-Urdu is not as clear-cut as it might seem from this brief description. McCawley (2004) gives a much more detailed and nuanced description of Hindi-Urdu corre-latives and readers can refer to McCawley's work for details. I thank one anonymous reviewer for bringing this important work to my attention.

The first piece of evidence that the correlative clause and its associated anaphoric element never form a constituent at any level comes from the fact that, unlike in Hindi, it is never possible to have the [correlative CP–correlate] sequence at any stage in Isbukun, as shown in (14) (cf. (9)).

(14) *Na ludah-un-ku   [sima ma-tushung uvaaz saia   tu   bunun].
      FUT   hit-PV-1SG.OBL   who   AV-bully   child 3SG.NOM LNK   person
      Intended: 'I will hit the person who bullies a child.'

On the other hand, the [correlative CP–correlate NP] sequence is generally sanctioned in languages that are independently shown to allow IP Adjunction via movement. As Bhatt shows, it is also possible to coordinate two [correlative CP–correlate] sequences. Assuming that coordination can only apply to constituents, coordinate structures such as (15) suggest that the Hindi correlative CP and its associated correlate phrase can combine to form a single constituent. This is expected under the adjunction-via-movement approach, under which the correlative CP is first locally merged as an adjunct to the nominal correlate.

(15) Rahul a:jkal [[[jo   kita:b Saira-ne   likh-i:]$_k$ vo$_k$]   aur [[jo cartoon
      Rahul nowadays REL book Saira-ERG write-PFV that and REL cartoon
      Shyam-ne bana:-ya:]$_j$ vo$_j$]] parh raha: hai.
      Shyam-ERG make-PFV   that   read   PROG be
      'Nowadays, Rahul is reading the book that Saira wrote and the cartoon that Shyam made.'
      Lit. 'Nowadays, Rahul is reading what book Saira wrote, that and what cartoon Shyam made, that.'   (Bhatt 2003: 504)

In sharp contrast, since the [correlative CP–correlate] sequence is not permissible in Isbukun Bunun, coordinating such sequences is expected to be problematic:

(16) *Na ludah-un-ku   [sima ma-tushung uvaaz saia   tu   bunun]
      FUT   hit-PV-1SG.OBL   who   AV-bully   child 3SG.NOM LNK   person
      mas [sima tanhaiu   tulkuk   saia   tu   bunun].
      and   who   AV.steal chicken 3SG.NOM LNK   person
      Intended: 'I will hit the person who bullies a child and the person who steals chickens.'

As a result, the fact that Isbukun correlativization only allows the correlative clause to appear non-locally to the left of the nominal correlate indicates that only the base-generated adjunction structure is available in Isbukun grammar.

Moreover, since the derivation in (12) does not involve overt syntactic movement, we expect it not to be sensitive to islands; in contrast, if the structure in (13) is available for Isbukun correlatives, island-sensitivity between the correlative CP and the correlate phrase would be an automatic consequence.[14] The relevant data regarding island effects support the base-generation structure in (12):

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[14]As one anonymous reviewer points out, given the island effects stated here alone, we still cannot rule out the movement strategy in Isbukun. Specifically, if both strategies are available to Isbukun correlatives, the introduction of an island will just eliminate one of them, but the sentence will still be grammatical if the movement strategy is also available in this language.

(17) Sima   su   kazima-un   hai,   kaun-un-ku   saicin   s-in-pitia   tu
     who   2SG.OBL   like-PV   TOP   eat-PV-1SG.OBL 3SG.OBL   BV<PFV>cook   LNK
     haising.
     Rice
     Lit. 'Who is liked by you, I eat the rice that (s)he cooked.'

(18) Sima   minsuma,   kazima-un-ku   saicin   s-in-baliv   tu   patasan.
     who   AV.come   like-PV-1SG.OBL 3SG.OBL   BV<PFV>buy   LNK   book
     Lit. 'Who comes, I like the book that (s)he bought.'

As can clearly be seen here, the relation between the correlative CP and the anaphoric nominal phrase is island-insensitive, exemplified by the inapplicability of the Complex Noun Phrase Constraint (Ross 1967). In other words, when the correlative CP is adjoined to the matrix clause, the nominal correlate can be contained within a relative clause. Such immunity to island effects is expected under the base-generated IP adjunction view but not under the movement approach.

The last argument against the IP adjunction via movement account comes from Binding Condition C effects. If the syntactic relation between the correlative CP and the anaphoric nominal is derived by initial merger of the correlative CP to the nominal correlate and subsequent movement of the correlative CP, we should expect that a pronoun cannot c-command the anaphoric nominal and co-refer with a R-expression contained within the correlative CP. If it did, the R-expression would be bound, inducing a Condition C violation (Lebeaux 1998). However, this expectation is not met, as illustrated in (19).

(19) [Sima mazima Abus$_k$]$_j$, na   kahaitas sain$_k$ saicia$_j$.
     who AV.like Abus   FUT   AV.hate 3SG.NOM   3SG.ACC
     'Abus hates the person that likes her.'
     Lit. '[Who likes Abus$_k$]$_j$, she$_k$ will reject him/her$_j$.'

(19) shows that a pronoun like *sain* in Isbukun may c-command the anaphoric nominal *saicia* and co-refer with a name (i.e., *Abus*) contained within the correlative CP. Such a pattern could only arise if speakers have access to the base-generated adjunction structure. Specifically, by initially merging the correlative CP to the matrix IP, sentence (19) could be derived without any Condition C effect resulting. On the other hand, if the Isbukun grammar had recourse only to the 'IP adjunction via movement' structure, then sentence (19) would be ruled out as a Condition C violation, just as its Hindi counterpart presumably is. As Bhatt observes in cases like (20), if a pronoun c-commands the anaphoric nominal in the Hindi correlative, then that pronoun cannot co-refer with a name contained within the correlative CP. The ungrammaticality of (20) in Hindi would thus follow from the non-availability of the

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Nevertheless, it should be noted that for languages that allow the movement strategy such as Hindi and Lhasa Tibetan (Cable 2009), the legitimate combination of the correlative CP and anaphoric NP is a prerequisite. Given that we have shown the impossibility of having the [correlative CP - anaphoric NP] sequence at any stage in Isbukun, combining these two observations (as well as the Condition C facts discussed later), we can take the lack of island effects to indicate that only the base-generation structure is available in Isbukun. I thank the reviewer for urging me to clarify this point.

base-generated IP adjunction structure in this language as well as standard assumptions regarding the evaluation of Condition C.

(20) *[jo   laRkii Sita-ko$_k$ pyaar kar-tii hai]$_j$ us-ne$_k$ us-ko$_j$ ṭhukraa di-yaa.
      REL   girl   Sita-ACC   love   do-HAB   be   that-ERG   that-ACC reject give-PFV
      Intended: 'She$_k$ rejected the girl who loves Sita$_k$.'
   Lit. '[Which girl loves Sita$_k$]$_j$, she$_k$ rejected her$_j$.'   (Bhatt 2003: 513)

   Therefore, the base-generated IP adjunction account correctly predicts that the Isbukun correlative sentence in (16) can be generated without inducing any Condition C problem. In this section I have presented arguments from non-constituency, island-insensitivity, and absence of Condition C effects that lend support to the base-generated status of the correlative clause. This range of facts would be mysterious if the correlative clause occupied its surface position as a result of movement; instead, these phenomena receive a natural explanation if we accept that the syntactic relation between the correlative CP and the nominal correlate is built on the base-generated configuration. Granted this, next we further examine how the non-local link between the correlative clause and its nominal correlate is established.

4. SEMANTIC REPRESENTATION AND BOUND VARIABLE INTERPRETATION

In Isbukun Bunun the correlative clause must precede the main clause. As demonstrated earlier, repeated here as (21), the link between the two can be mediated by a demonstrative NP, a pronoun or a *wh*-indefinite, which occurs in the main clause. Following Srivastav (1991) and Dayal (1995), I suggest that the correlative clause is adjoined to the matrix IP and acts as a quantificational phrase binding a position inside its sister IP, as schematized in (22).

(21) Sima ma-tushung uvaaz, na   {saia   tu   bunun/saia/sima}
      who   AV-bully   child   FUT 3SG.NOM   LNK   person/3SG.NOM/who
      ludah-un-ku.
      hit-PV-1SG.OBL
      'I will hit the person who bullies a child.'

(22)
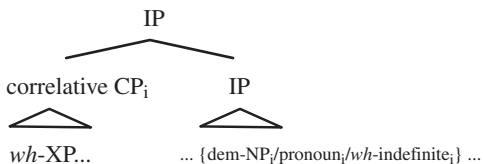
Specifically, I propose that the *wh*-element in the correlative CP is an operator that combines with the predicate inside the correlative CP to yield a quantifier-level meaning for the whole CP. That is, the correlative CP is a quantifier whose meaning is compositionally built upon the meaning of the *wh*-operator inside it.[15]

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[15]Note that a direct linking between the *wh*-operator and the main clause anaphoric-NP is untenable since they are not in a c-command relation. Instead, the whole correlative CP can bind the anaphoric nominal in the main clause since the clause c-commands it.

On the other hand, the anaphoric nominal in the main clause (i.e., the demonstrative NP, pronoun or *wh*-indefinite) is a bound variable quantified over by the correlative CP, and the full structure is interpreted by standard rules of quantification.[16] Under this view, a correlative CP like (21), for example, denotes the set of properties of some individual(s) who bullies children and the main clause denotes the property of being hit by me. Therefore, sentence (21) is true if and only if the property of being hit by me is one of the properties of the people who bully children.

There are several reasons for adopting this analysis. To begin with, it captures an important empirical generalization: there must always be a *wh*-phrase in the Isbukun correlative CP, while other non-*wh* words are cannot appear in the same position.

(23) *Aiza bunun   ma-tushung uvaaz (hai), na   ludah-un-ku   saia   tu
      exist person   AV-bully   child TOP   FUT   hit-PV-1SG.OBL 3SG.NOM   LNK
      bunun.
      Person
      Intended: 'If a person bullies a child, I hit him.'

This fact follows from the current analysis: A lexical indefinite cannot function as an operator and subsequently combine with the open sentence denoted by the IP inside the correlative clause. Therefore, a correlative CP without a *wh*-phrase serving as an operator is thus ill-formed in Isbukun. In other words, non-*wh* words (e.g., lexical indefinites) cannot fulfill the function because they fail to serve as operators. They cannot enable the correlative CP to generate the quantificational interpretation. This generalization poses a challenge to the donkey anaphora treatment (Cheng and Huang 1996); under this view, there is no principled reason to prohibit unselective binding of a lexical indefinite since an indefinite NP can usually be unselectively bound by a proper operator (Lewis 1975, Saito 2004). Therefore, treating the Isbukun correlative as involving a quantificational structure provides a straightforward explanation for the obligatory presence of a *wh*-phrase in the correlative CP.

Along the same lines, the current analysis also captures a significant difference between a donkey pronoun and the anaphoric nominal in a correlative. A donkey

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[16]There are several well-documented similarities between *wh*-questions and correlatives. For example, in Polish, among other languages, both constructions use the same range of interrogative pronouns (Citko 2009). In the case of Isbukun Bunun, we also have similar patterns, where *wh*-questions and correlatives use the same set of interrogative pronouns. Crucially, it can be observed that the *wh*-forms in Isbukun Bunun can function either as operators or as variables, depending on the syntactic environment. This phenomenon is not uncommon. For instance, Bruening (2007) shows that there is no correlation between using *wh*-words as indefinites and a *wh*-movement parameter for a given language. The typological survey he reports on reveals that languages can have the full range of binding of *wh*-indefinites while *wh*-movement, for which *wh*-words are used as operators, is obligatory.

pronoun is known to be optional, while relative clause binding is not (cf. Srivastav 1991). As shown in (24b), the donkey anaphor can be omitted, and the main-clause VP need not contain any reference to the antecedent. However, this is not possible in (25); there, the main clause *must* contain an argument referring back to the *wh*-word in the correlative CP. In other words, in a correlative construction the number of *wh*-operators must match the number of anaphoric nominals in the matrix clause. Under the present view, the correlate requirement can be better understood in the context of (22): the mandatory presence of an anaphoric nominal follows from the fact that the correlative clause, being a quantifier, must bind a variable; otherwise, the ban on vacuous quantification is violated (Kratzer 1995). As such, some anaphoric nominal must occur so as to provide the variable to be bound by the correlative clause, hence the correlate requirement.

(24) a. Every farmer who owns a donkey beats it.

b. Every farmer who has a donkey is happy.

(25) *Sima   ma-tushung   uvaaz   (hai)   makuang.   (cf. (21))
     who   AV-bully   child   (TOP)   AV.bad
     Intended: '(People) who bully children are bad.'

More importantly, the proposed binding structure is able to capture the types of anaphoric nominals allowed in the matrix clause. Suppose that the Isbukun Bunun correlative involves a quantificational structure in which the correlative CP binds a variable in the main clause. Other things being equal, a proper characterization of the phenomenon would then amount to the identification of appropriate variables in a given language. I propose that this is where natural languages can vary, as languages are known to differ parametrically in the availability of bound variable interpretations for different types of lexical items.[17] For example, languages such as Chinese (Y.-H. A. Li 1992, Tsai 1994, Reinhart 1998), Japanese (Kuroda 1965, Baker 1970, Nishigauchi 1990), Korean (Suh 1989), Malay (Cole and Hermon 1998, 2000), Malayalam (Jayaseelan 2001), Indonesian and numerous others (see Cheng 1991 and Haspelmath 1997) allow *wh*-indefinites as bindable variables, though this possibility is not necessarily available in other languages. In the same fashion, there are languages that allow pronouns to be free variables that pick up quantificational force of the operator which scopes over them, while this option is not available for other languages. Returning to our earlier puzzle: what makes demonstrative phrases, pronouns and *wh*-indefinites form a class in the Isbukun correlative? The current proposal thus provides a principled account: the grammar of Isbukun Bunun allows demonstrative phrases, pronouns and *wh*-indefinites to serve as anaphoric nominals in correlatives since they can

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[17]I am not claiming here that allowing *wh*-indefinites is a sufficient condition for a language to permit correlate *wh*-phrases in the correlative constructions, as that option is presumably constrained by other independent principles in the grammar as well.

independently be construed as bound variables in this language, and thus can
satisfy the quantification requirement imposed by the structure of (22). The evi-
dence for the bound-variable status of each of these elements is provided in (26),
where it is clear that demonstrative phrases, pronouns and *wh*-phrases can serve
as bound variables. In each case the referential value varies with the value-as-
signment of the quantificational antecedent. To put it differently, the indicated
indexing possibilities are possible only when the meaning of a demonstrative
phrase, a pronoun or a *wh*-indefinite can include a free variable bound by a
quantifier.

(26)   *Bound variable interpretation*

  a. *Dem-phrase*
     [tacinicini   tu   bunun]$_i$ hai   sasadu   amin   kazima-un   saicin   tu
     everyone   LNK   person   TOP   AV.stare   also   like-PV   3SG.OBL   LNK
     binanauaz-a$_i$.
     girl-DEM
     'Every person$_i$ is staring at that$_i$ girl he$_i$ likes.'

  b. *Pronoun*
     [tacinicini   tu   bananaz]$_i$ hai   mazima   amin   isaicia$_i$ pingaz.
     everyone   LNK   husband   TOP   AV.like   also   3SG.GEN   wife
     'Every husband$_i$ loves his$_i$ wife.'

  c. *Wh-phrase*
     tacinicini$_i$ hai   na   ma-baliv   tu   cikis   maaz$_i$ ma-pudaan   sia   suan.
     everyone   TOP   FUT   AV-buy   LNK   some   what   AV-send   at   2SG.LOC
     'Everyone$_i$ will buy something$_i$ to send to you.'

The fact that the Isbukun correlative permits the three types of NPs in question to
be the anaphoric nominal can therefore be attributed to the fact that these NPs
qualify as bindable variables, and can be bound in a proper binding configuration
in Isbukun. In other words, the current proposal straightforwardly explains why
the three NP types form a natural class as eligible anaphoric nominals in the
Isbukun correlative.[18]

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[18]As stated earlier, we basically follow Srivastav (1991) and Dayal (1996) in assuming that
the set of properties of the individual(s) in question is designated by the correlative that is
shifted to a generalized quantifier. This generalized quantifier is then applied to the matrix
clause, which is taken to designate a property, with the correlate phrase construed as a variable
inside it. Note that later works such as Grosu and Landman (1998) differ from Dayal in their
treatment of the correlate. Specifically, they agree that there is a variable in the place of the
correlate, but they consider the meaning of the correlate itself also contributes to the building
of the generalized quantifier outside the IP. In other words, the correlate is not interpreted in
situ, but instead plays the same role in building a generalized quantifier out of the CP as
does the CP-external material. Such a proposal is mainly motivated by the need to capture
the fact that in languages like Hindi the correlate is required to be a definite item (though
their proposal says nothing about the obligatoriness of a demonstrative in Hindi). Their rejec-
tion of Dayal's binding account is mainly based on observations that the correlate can be a

5. CONCLUSION

This paper offers a detailed case study of correlativization in Isbukun Bunun. I showed that in this language the anaphoric nominal and the correlative clause do not form a constituent at any point of the derivation. Instead, the correlative clause is base-generated in a position adjoined to the main clause IP on the left. This view is supported by non-constituency facts, island-insensitivity and the absence of Condition C effects. Moreover, from its left-peripheral position, the correlative clause as a whole binds the anaphoric nominal, which in Isbukun Bunun can be either a demonstrative phrase, a pronoun or a *wh*-indefinite. To sum up, this study shows that a base-generation binding approach to the Isbukun correlative is empirically and conceptually adequate in that it allows us to capture the range of syntactic and semantic properties of correlativization in Isbukun Bunun.

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universal like *sab* ('all') or *dono* ('both'), which might constitute a challenge if *all/both* do not participate in CP-external quantification.

(i) jo   laRke   khaRe   hai, {dono/sab} lambe haiN.
    which boys   standing   are   both/all   tall   are
    'Which boys are standing, {both, all}are tall.   (Grosu and Landman 1998: 164)

For relevant details, readers can refer to Grosu and Landman (1998), but for the purpose of our discussion, it is crucial to point out that the possible difficulty stated above does not apply to Isbukun since in Isbukun it is impossible to place quantifiers like *all* and *both* in the correlate phrase. More importantly, under Grosu and Landman's account, it is unclear why the correlate in the Isbukun correlative can consist of a *wh*-indefinite, which carries non-uniqueness implications, given that their account would expect the correlate only to be a definite expression. As a result, the challenge raised in the previous works to the Dayal-style binding account does not seem to be a problem for Isbukun.

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