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# The landscape of correlatives: an empirical and analytical survey

Anikó Lipták

## 1. What is a correlative?

The word *correlative* has multiple uses in linguistics. It is sometimes used to refer to pairs of words that show up linked to each other, across phrases or whole clauses. This is the sense in which grammars refer to "correlative (adverbs)" or "correlative subordinators" to describe pairs of words like 'if...then..., (al)though... yet/nevertheless..., as... so..., either... or...' (Quirk et al. 1972, Chung 2004, Johannessen 2005). The term correlative is also used to refer to combinations of a clause and a pronominal linked to it. In a few cases, this means the combination of an argumental clause and its sentential pronominal (e.g. Berman et al 1998), as in *I couldn't believe it that John won the lottery*. The pronominal here is called correlative to refer to the fact that it is related to the embedded clause, whose argument slot it occupies next to the verb. Even more frequently, however, the term *correlative* is used to refer to combinations of a relative clause and a possibly non-adjacent nominal expression linked to it. This is the way in which the typological literature refers to relative clause constructions that instantiate a non-local relativization strategy well-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). This book is about this type of relativization construction.

In a correlative relativization strategy a left-peripheral relative clause is linked to a (possibly phonetically unrealized) nominal correlate in the clause that follows the relative clause. An illustrative example is given from Hindi — perhaps the most well-known and most cited example of a correlative, from Srivastav (1991: example 3a):<sup>1</sup>

- (1) [jo laRkii khaRii hai ] vo lambii hai  
REL girl standing is that tall is  
lit. Which girl is standing, that is tall.  
'The girl who is standing is tall.'

The defining property of correlative constructions is the left peripheral position of the relative clause. As we can see in example (1), the left peripheral relative clause (also called the protasis) is linked to the main clause (the apodosis) by a correlate, a nominal expression. The latter, *vo* 'that' in (1), picks out the same referent as the relative clause and occupies

the same argument slot. The schematic representation of a correlative construction can thus be captured by the structure in (2):

- (2) [correlative clause ... relative phrase ... ] [main clause ... correlate ...]

## 2. Why are correlatives interesting?

The interesting property of correlative constructions is that while they are used as equivalents of English-type headed relatives, their syntax and semantics differ from these. The syntactic and semantic differences give rise to a set of properties that are not found with English-type headed relative clauses. These properties are summarized in (3):

- (3) *Characteristic properties of correlatives*
- (i) a peripheral position of the relative clause
  - (ii) the possibility of spelling out the nominal head both in the relative clause and in the correlate
  - (iii) demonstrative requirement on the correlate
  - (iv) the availability of multiple relative phrases

In the following, these special properties will be illustrated for Hindi, following Srivastav (1991)/Dayal (1996).<sup>2</sup>

### 2.1. The position of the relative clause

The first characteristic property of correlatives is their placement. Correlatives predominantly occur in the left periphery, in a position that is not necessarily adjacent to the correlate nominal expression (Dayal 1996):

- (4) [jo vahaaN khaRii hai] raam us laRii-ko jaantaa hai  
 REL there standing is Ram that girl-ACC know is  
 'Ram knows the girl who is standing there.'

The peripheral position of the relative does not necessarily mean initial position in the sentence. Topics of various types can precede the correlative:

- (5) kal [jo vahaaN khaRii hai] raam us  
 tomorrow REL there standing is Ram that  
 laRii-se mil-egaa  
 girl-WITH meet-FUT  
 'Tomorrow Ram will meet the girl who is standing there.'

The left peripheral placement of correlatives clearly contrasts with the distribution of headed relatives. Headed relatives either occur next to the

nominal head they modify (cf. 6a), or they occur to the right of it at a distance (cf. 6b). Unlike correlatives, a relative clause that originates from a headed construction can never precede the modified nominal in the left periphery, cf. (6c):

- (6) a. John called somebody [who he knows from school] yesterday.  
 b. John called somebody yesterday [who he knows from school].  
 c. \*[Who he knows from school] John called someone yesterday.

The left peripheral position of correlative clauses is thus a distinctive characteristic that sets them apart from headed relatives in English, and from headed relatives in other languages, too.

Hindi correlatives contrast with Hindi headed relatives in the same way. Hindi also possesses a postnominal headed relativization strategy, where the relative clause occupies a clause-internal position, necessarily right-adjacent to the head noun:

- (7) vo laRkii [jo khaRii hai] lambii hai  
 that girl REL standing is tall is  
 'The girl who is standing is tall.'

Such relative clauses cannot be found non-adjacent to their head in sentence-internal position:

- (8) \*vo laRkii lambii [jo khaRii hai] hai  
 that girl tall REL standing is is

This contrasts with correlatives, where the relative clause can be placed non-adjacent to the nominal it modifies, as was shown in (4).

## 2.2. *The position of the head NP*

The second characteristic property of correlatives concerns the distribution of the common noun they modify. This common noun can be spelled out either inside the relative clause, as was shown in (1) or inside the correlate (cf. 9a), or both inside the relative and in the correlate phrase at the same time, as shown in (9b):

- (9) a. [jo khaRii hai] vo laRkii lambii hai  
 REL standing is that girl tall is  
 b. [jo laRkii khaRii hai] vo laRkii lambii hai  
 REL girl standing is that girl tall is  
 lit. Which girl is standing, that is tall.  
 'The girl who is standing is tall.'

Headed relatives contrast with correlatives in that they do not allow for the option where the nominal appears both in the head position and in the relative clause.<sup>3</sup>

- (10) a. vo laRkii [jo khaRii hai] lambii hai  
 that girl REL standing is tall is  
 b. \*vo laRkii [jo laRkii khaRii hai] lambii hai  
 that girl REL girl standing is tall is  
 lit. \*That girl which girl is standing, is tall.  
 'The girl who is standing is tall.'

### 2.3. The nature of the correlate

The third characteristic property of correlatives is related to the correlate in the main clause. This item has to be a definite phrase with a special requirement: it has to contain a demonstrative item. This is the 'demonstrative requirement' referred to by Srivastav (1991)/Dayal (1996). If the correlate does not contain a demonstrative, ungrammaticality results, even in cases where the correlate is a definite phrase otherwise, like in the following sentence (bare nouns are definite in Hindi):

- (11) \*[jo laRkii khaRii hai] laRkii lambii hai  
 REL girl standing is girl tall is  
 'The girl who is standing is tall.'

Indefinite phrases like *do* 'two' are similarly ruled out as correlates (12a), although they are fine when the relative clause follows them, in the headed relative pattern (12b):

- (12) a. \*[jo laRkiyaaN khaRii haiN] do lambii haiN  
 REL girl standing are two tall are  
 b. do laRkiyaaN [jo khaRii haiN] lambii haiN  
 two girls REL standing are tall are  
 'Two girls who are standing are tall.'

(12a) can be saved by turning *do* into a partitive phrase, by adding a demonstrative *un-meN.se* 'of them' to it:

- (13) jo laRkiyaaN khaRii haiN un-meN.se do lambii haiN  
 REL girls standing are that-PART two tall are  
 'Two of the girls who are standing are tall.'

Apart from definite DPs with a demonstrative, universal quantifiers like *sab* 'all' or *dono* 'both' can also appear as correlate phrases. These are however not exceptions from the demonstrative requirement as these quantifiers can

also appear with a demonstrative (*ve*) without a difference in meaning, suggesting that when this demonstrative is not spelled out, it is present covertly (Dayal 1996).

#### 2.4. *Multiple relatives*

Another, very remarkable, property of correlatives is that they can contain multiple instances of relative pronouns, to be matched with the same number of correlate phrases in the main clause:

- (14) [jis laRkii-ne jis laRke-ke saath khelaa] us-ne  
 REL girl-ERG REL boy-GEN with played that-ERG  
 us-ko haraayaa  
 that-ACC defeated  
 lit. Which girl played with which boy, she defeated him.  
 'Every girl defeated the boy she played with.'

Relative clauses with multiple relative pronouns are unique to correlative constructions. A relative clause containing multiple relative pronouns cannot follow multiple nominal phrases as heads, as one relative clause cannot be headed by two phrases at the same time:

- (15) \*us-ne us-ko [jis laRkii-ne jis laRke-ke saath  
 that-ERG that-ACC REL girl-ERG REL boy-GEN with  
 khelaa] haraayaa  
 played defeated  
 'idem'

The requirement that there be the exact same number of correlates as relative phrases is referred to as the matching requirement (see Leung this volume).

The four properties reviewed above are typical of correlatives and do not characterize headed relatives either in Hindi or in English. This reinforces the suspicion that correlatives are fundamentally different from headed relatives. The relation between the relative clause and the main clause demonstrative phrase is not that of noun modification as known in the case of headed relatives.

#### 2.5. *Comparison with relatives on the right periphery*

It must be noted that correlative clauses are distinct from relative clauses that appear on the right periphery of clauses in what can be taken to be a position reached by extraposition. In Hindi, headed relative clauses can be extraposed to the right, just like in English. According to Srivastav(1991)/

Dayal (1996) and Bhatt (2003), right extraposed relatives differ from correlatives in that properties (3ii-iv) do not characterize these.<sup>4</sup>

To start with the second property, right peripheral relatives cannot contain a common noun in the relative phrase, similarly to headed relatives (cf. 10b) above. The judgments reported below come from Srivastav (1991), but note that Mahajan (2000) considers (16b) to be grammatical:

- (16) a. vo laRkii lambii hai [jo khaRii hai]  
       that girl tall is REL standing is  
       b. \*vo laRkii lambii hai [jo laRkii khaRii hai]  
       that girls tall is REL girl standing is  
       c. \*vo lambii hai [jo laRkii khaRii hai]  
       that tall is REL girl standing is  
       'The girl who is standing is tall.'

Concerning the demonstrative restriction, the literature (Srivastav (1991)/Dayal (1996), Bhatt (2003), Mahajan (2000)) agrees that it cannot be found among right peripheral relatives. So the following example is good without any demonstrative (compare the ungrammaticality of (12a)):

- (17) do laRkiyaaN lambii haiN [jo khaRii haiN]  
       two girls tall are REL standing are  
       'Two girls who are standing are tall.'

Property (iv), the availability of multiple relative phrases does not characterize relatives on the right periphery, either:<sup>5</sup>

- (18) \*us-ne us-ko haraayaa [jis laRkii-ne jis laRke-ke  
       that-ERG that-ACC defeated REL girl-ERG REL boy-GEN  
       saath khelaa]  
       with played  
       intended: 'Every girl defeated the boy she played with.'

The examples above indicate that right-peripheral relatives cannot contain a common noun 'head', cannot host multiple relative phrases, but can have indefinite phrases as correlates. As the reader can ascertain, the same set of properties characterize headed relatives, too. This makes it entirely plausible that the right-peripheral relatives originate as headed relatives, and undergo extraposition to the right. Correlatives on the other hand are arguably not derived from headed relatives via a mechanism of extraposition similar to that of extraposition to the right.

In the light of the above discussion the conclusion presents itself that left peripheral relatives constitute a relativization strategy on their own, vindicating the use of a special term, correlativization, for this relative clause formation type. The schematic representation of correlatives (cf.

19a), as opposed to headed and extraposed relatives is shown in (19c). Rel-XP stands for relative phrase and Dem-XP for the correlative phrase.

(19) Relative clause types

- |    |  |             |
|----|--|-------------|
| a. | [correlative clause Rel-XP...][main clause ... Dem-XP ...]                         | correlative |
| b. | [main clause ... [NP [relative clause Rel-XP ... ]]]                               | headed      |
| c. | [main clause ... [NP] <sub>i</sub> ...] [relative clause Rel-XP ... ] <sub>i</sub> | extraposed  |

The structural differences sketched in (19) is what Srivastav (1991) and articles in its wake subscribe to, including the articles in this volume. It has to be noted that there have also been proposals that do not treat correlatives as a relativization strategy distinct from the derivation of headed and extraposed relatives. In these proposals headed relatives and correlatives receive a uniform account. Both types of proposals will be reviewed in sections 5.1. and 5.2.

### 3. Correlatives in the typology of relative clauses

The typological literature (Downing 1973, Lehmann 1984, Keenan 1985) also recognizes that correlatives instantiate a typologically distinct type of relativization, in which the relative clause is positioned at the periphery of the main clause. Correlatives are one of the four main types of relative clause formation that can be differentiated according to parameters like the presence of a subordinating nominal head and the position of the relative clause with respect to the modified nominal.

The four main types of relative clauses are: postnominal relatives, prenominal relatives, internally headed (also called circumnominal) relatives and correlatives. As was shown in the previous section, correlatives differ from pre- and postnominal relatives in that they do not follow or precede the nominal they modify in an adjacent manner. They are not embedded in a relativized noun phrase. This of course does not mean that they are not subordinated clauses, but the subordinator in this case is a clausal constituent: the main clause. Unlike postnominal and prenominal relatives, correlatives can contain their head noun inside the clause as was shown in (9) above. In this respect they are similar to internally headed relatives. Yet the two differ, too, in several other respects. Firstly, in the case of correlatives the modified nominal need not be spelled out inside the relative, it can also be represented outside the correlative clause (cf. example (9a)). Secondly, while the internal head is always fronted in correlatives, it is not always fronted in internally headed relatives. Thirdly, internally headed relative clauses do not contain a relative pronoun, while correlatives do.

The position of correlatives is also different from other types of relative clauses. Correlatives are relative clauses that do not occupy a sentence-

internal position corresponding to an argument/adjunct slot, rather they occur in a left-adjoined position in the matrix clause. Such a placement sets them apart from other types of relatives, as the following schematic representation, adapted from De Vries (2002), shows ("N" stands for the nominal the (cor)relative modifies):

(20) a. postnominal relatives:

[matrix clause ... [N [relative clause ...] ... ]

b. prenominal relatives:

[matrix clause ... [[relative clause ...] N] ... ]

c. internally headed relatives:

[matrix clause ... [relative clause ... N ...] ... ]

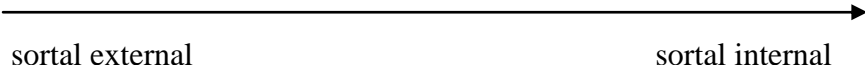
d. correlatives:

[matrix clause (...) [relative clause (N)... ] [matrix clause ... Dem (N)...]]

The fact that correlatives do not occupy sentence-internal positions, coupled with the fact that they do not exhibit external determiners, nominalizing suffixes and case endings of various sorts (including adpositions) made researchers like Keenan (1985) or Dayal (1996) conclude that correlatives are not nominal in nature, they do not correspond to a DP externally. Rather, they are bare sentences, i.e. CPs or IPs. In this they differ from internally headed relatives, which are externally nominal (DPs), evidenced by possible nominal morphology on the relative clause (Culy 1990). Correlatives for this reason cannot be considered to be extraposed internally headed relatives.<sup>6</sup>

Turning now to semantic typology, and the question how semantic and syntactic types of relative clauses correlate, correlatives seem to be more like restrictive relatives than appositive ones. Grosu & Landman (1998), however, define correlatives — together with free relatives, degree relatives (also called amount relatives) and Quechua-type internally headed relatives — to be of a 'third kind'. The special, third-kind nature of correlatives is due to a meaning component that does not characterize either restrictives or appositives: maximalizing semantics.<sup>7</sup> Relative clauses with maximalizing meaning are distinct from restrictive and appositive relatives when it comes to the importance of the head noun for the meaning of the whole construction and with respect to the relative clause. Representing these on a semantic scale indicating the importance of external and internal material, as in (21), we can place the three types in the following way:

(21) Appositives                      Restrictives                      Maximalizing relatives  



On the left side of the scale we find so-called sortal-external relatives, where the external material is most important. Sortal external are appositives, and

to a less extent, restrictives. With appositives, the reference of the construction cannot be derived from material inside the relative clause. Restrictives are less dependent on external material only, since both internal and external material is crucial for interpretation, but they can still be considered sortal-external. Correlatives and other maximalizing relatives are at the opposite end of the scale, being sortal-internal: the content of the relative clause is more important than external material, when the latter is present.

Now, what is exactly the import of maximalizing semantics? Maximalizing means that correlatives always refer to a maximal individual that has the property denoted by the relative clause. In other words, they pick out a maximal individual or maximal degree or the maximal set of individuals/degrees as their denotation. Maximalizing semantics is due to a maximalization operation, which, in the realm of relative clause constructions characterizes free relatives and degree relatives as well.<sup>8</sup> To illustrate the effect of maximalization, consider the following degree relative:

- (22) I invited the boys that there were in the classroom.  
       [*maximalizing relative*]

(22) implies that I invited *all* boys in the classroom. The relative clause here, *that there were in the classroom*, is clearly not a restrictive clause. If it was, *there* could not occur in it:

- (23) I invited the boys who (\*there) were in the classroom.  
       [*restrictive relative*]

The difference between restrictive and maximalizing relatives is that the restrictive in (23) singles out boys in the classroom, out of a larger group of boys, while the degree relative in (22) does not make reference to such a larger group, rather, it refers to the maximal 'amount' of boys. To illustrate, let us imagine that there are five boys in a classroom. If there are five, it is also true that there are four, three or two boys there. These amounts, however, are not available as the reference of the degree relative, instead only the maximum number of boys is taken, i.e. the denotation is *maximalized*. The same maximalization applies in correlatives. Consider (24):

- (24) [jo laRke khaRe haiN], ve lambe haiN.  
       REL boys standing are those tall are  
       lit. Which boys are standing, they are tall.  
       'Every boy who is standing is tall.'

In a similar vein as in the case of the degree relative above, the correlative here refers to *all* boys standing, which corresponds to the universal meaning of correlatives. When the correlative is singular, it picks out an atomic individual, which is necessarily unique. This gives rise to the characteristic definite meaning of the correlative, and makes the correlative analogous to a definite description.

As Grosu and Landman (1998) argue, the definite nature of correlatives explains why the correlate DP must be definite or universal:

- (25) [jo laRke KhaRe haiN], ve/dono/sab/\*do/\*kuch/\*adhiktam  
 REL boys standing are those/both/all/\*two/\*few/\*most  
 lambe haiN.  
 tall are  
 lit. Which boys are standing, they/both/all/\*two/\*few/\*most are  
 tall.  
 ‘Those/both/all boys who are standing are tall.’

That this effect is due to maximalization can be shown by the fact that degree relatives are similarly selective when it comes to their head. They only allow definite DPs in head position:

- (26) I invited {the/the ten/the many/the few/\*ten\*many/ \*some} boys  
 in the classroom.

According to Grosu and Landman (1998), there is yet another property of correlatives that could fall out from the maximalizing semantics. As (27) shows, correlatives do not stack (but see Davison this volume for an exception), similarly to degree relatives (cf. 28a) and contrary to restrictives (cf. 28b):

- (27) \*[jo laRkii KhaRii hai] [jo ravii-kii dost hai], vo  
 REL girl standing is REL Ravi-GEN friend is that  
 bahut lambii hai.  
 very tall is  
 lit. Which girl is standing, [\*who is Ravi’s friend ], she is very tall.
- (28) a. I invited the girls that there were in the classroom (\*that there  
 were there to study).  
 b. I invited the girls who (\*there) were in the classroom, who were  
 there to study.

We will come back to the explanation for the impossibility of stacking in section 6.2 below.

#### 4. The cross-linguistic distribution of correlatives

Correlatives are typologically rare constructions among the world's languages. Downing (1973) argues they are limited to head-final (OV) languages, according to an implicational universal. As Keenan (1985) and also De Vries (2002) point out, this generalization needs to be qualified, as head finality is not universal among correlative languages. Rigid verb final languages like Japanese or Turkish do not feature correlatives, "loose" head final languages on the other hand do. Loose head final languages are those that allow some noun phrases, especially heavy noun phrases to occur in postverbal positions, without any special effect of foregrounding or backgrounding. Apart from loose head final languages, languages with exceedingly free word order, like the early Sanskrit or Mediaeval Russian also had correlatives:

- (29) I kotoruju zvezdu potrebno bylo nam videt'  
and which.ACC star necessary was us see.INF  
tu zvezdu zaslonilo tucheju  
that star covered cloud.by  
'The star we needed to see was covered by cloud.'

Similarly to Mediaeval Russian, present-day Slavic languages also feature correlatives. The documented languages here are: Bulgarian, Macedonian, Serbo-Croatian (Izvorski 1996, Arsenijević this volume) and Polish (Citko this volume). Hungarian, another free word order language, also has correlatives (Bhatt and Lipták this volume, Lipták 2008).

The following compendium gives an exhaustive list of languages that have correlatives according to our present knowledge.

To start with the Indian peninsula, correlatives were used in Sanskrit (Andrews 1985, Davison this volume). Modern Indo-Aryan languages also use correlatives, with the exception of Southern Konkani, Saurashtri, and Sinhalese. Correlatives are documented in the following Indo-Aryan languages: Assamese (Masica 1991), Bengali (Dasgupta 1980, Bagchi 1994), Bhojpuri (Grierson 1883, Shukla 1981), Dakkhini Urdu (Schmidt 1981), Gujarati (Cardona 1965, Lambert 1971), Hindi-Urdu (Kachru 1973, Srivastav 1991, Dayal 1996), Kashmiri (Wali and Koul 1997), Maithili (Grierson 1883, Yadav 1996), Marathi (Junghare 1973, Berntsen and Nimbkar 1975, Pandharipande 1997), Nepali (Masica 1991, Anderson 2007a,b), Oriya (Sahoo and Hellan 1998), Punjabi (Bhatia 1993), Sindhi (Trumpp 1872). Dravidian languages also have correlatives: these can be found in Kannada (Sridhar 1990), Malayalam (Asher and Kumari 1997), Tamil (Asher 1982) and Telugu (Krishnamurti and Gwynn 1986). The literature is divided as to whether correlatives in these languages are borrowed from Indo-Aryan (Nadkarni 1970) or indigenous phenomena

(Lakshmi Bai 1985). Burushaski, a language isolate in Pakistan and India also has correlatives (Tifou and Patry 1995, Berger 1998).

Among Indo-European languages, the following have or had correlatives: Latin (Gildersleeve and Lodge 1974, Lehmann 1984, Bianchi 2000), Old English (Curme 1912), Hittite (Berman 1972, Raman 1973, Bach and Cooper 1978, Garrett 1994, Probert 2006), Lycian (Garrett 1994), Medieval Russian (Keenan 1985), Bulgarian, Macedonian, and Serbo-Croatian (Izvorski 1996, Arsenijević this volume), Polish (Citko this volume).

From other language families we find correlatives in Bambara (Zribi-Herz and Hanne 1995), Basque (Rebuschi 2003, this volume, Lipták and Rebuschi to appear), Huallaga Quechua (Weber 1983), Hungarian (Bhatt and Lipták this volume, Lipták 2008), Tibetan (Cable this volume), Warlpiri (Hale 1976, Keenan 1985).

Apart from the above list of languages, De Vries (2002: 388) also lists the following languages that have correlatives, based on various typological sources that do not always quote attested data: Avestic, Diegueño, Erzya, Farsi, Gaididj, Hurric, Kala Lagaw Ya, Mandinka/Maninka, Mohave, Vai and Wappo.

When it comes to the distribution of correlatives cross-linguistically, a separate mention must be made about comparative correlatives, which are constructions of the type (30) in English.

(30) The more you read, the less you understand.

As Den Dikken (2005) shows, constructions of this type are best analyzed as correlatives (for details, see section 5.3 below). This conclusion is based on a detailed study of comparative correlatives in a variety of languages, including German, Dutch, Russian, Polish and Hungarian and various stages of English. As this list also shows, comparative correlatives are very widespread cross-linguistically, more wide-spread than ordinary correlatives. Many languages that do not feature correlatives of the Hindi type productively have comparative correlatives: e.g. English, German, Dutch, French, Maltese or Greek (cf. Beck 1997, Culicover and Jackendoff 1999, Borsley 2003, Den Dikken 2005). In these languages comparative correlatives are handed down from earlier stages of the language — if we can believe Haudry's (1973) diachronic study in claiming that headed relatives in present-day languages are descendants of correlative constructions at earlier stages of the language (on the productive nature of correlativization at earlier stages of English, see Geis 1985 as well). Whether or not such a diachronic development can indeed be attested (for arguments to the opposite, see König and van der Auwera 1988, Probert 2006, Rebuschi this volume), comparative correlatives are not the only correlative-looking constructions in non-correlative languages. These languages frequently feature proverbs with a correlative structure, like the English proverb *Where there's a will, there's a way*.

## 5. Syntactic approaches to correlatives

Syntactic approaches to correlatives concern themselves with the following issues:

- (i) What is the position of the correlative clause?
- (ii) How does it come to occupy this position?
- (iii) What kind of relationship does the correlative clause entertain with the correlate in the main clause?

In the following sections, we turn to these issues in turn.

### 5.1. *The position of the correlative clause*

As far as the position of the correlative is concerned, all researchers agree that the surface position of correlatives is one adjoined to a clausal projection — at least in the overwhelming majority of correlatives.<sup>9</sup> For Hindi, this projection is taken to be IP in Dayal (1996), based on the observation that correlatives can be preceded by topics (see also example (5) above):

- (31) kaun aayegaa [jo laRkii vahaaN rahtii hai] us-ko  
who come REL girl there live is that-DAT  
maalum hai  
known is  
'Who will come, which girl lives there, she knows.'

The IP-adjoined position of correlatives is also taken for granted in Dwivedi (1994), Mahajan (2000) and Bhatt (2003).

Special attention to the attachment site of the correlative in comparative correlative constructions is given in Den Dikken (2005, this volume). Den Dikken shows that the correlative clause in Dutch can either adjoin to CP or IP, depending on the category of the main clause, which in turn depends on the context. In root contexts, the main clause is a CP, and adjunction takes place to this CP. In embedded contexts, the main clause is only an IP, and adjunction is at this level. The difference in category is evidenced by word order differences in the main clause: V2 effects to the right of the comparative correlative in root contexts and obligatory verb final order in embedded ones.

The left peripheral position of correlatives has been related to that of topics in Lipták's (2005, 2008) work on Hungarian and Anderson's (2007a,b) on Nepali.<sup>10</sup> In these languages, correlatives participate in a discourse strategy marking certain topic constituents. The type of topics

they instantiate can be language specific. In Hungarian correlatives have the interpretation of aboutness topics, compatible with either old or new information. Their role can furthermore be likened to 'simplifying' left dislocates, in the definition of Prince (1998). Both correlatives and left dislocates simplify processing and pronunciation, i.e. they "lift the burden off" the sentence internal material by placing new information into a separate discourse unit in the higher left periphery. In Nepali, as Anderson (2007b) shows, correlatives — similarly to left dislocates — express familiar topics, i.e. those that are salient in the discourse. Nepali correlatives cannot denote a brand new referent.

Coupled with their topic function, correlatives exhibit syntactic properties of topical constituents as well, as is shown to be the case for Hungarian in Lipták (2005, 2008). Correlative clauses line up in the left periphery among other topic constituents and can undergo long distance movement of the sort ordinary topics can. Topic syntax of the correlative clause has also been detected in Hittite and Lycian (cf. Garrett 1994). In Lycian, one can even find morphological evidence for the topic status of correlatives, as both correlatives and ordinary topics are followed by the same marker *me* (see Garrett (1994) for specific examples).

## 5.2. *The derivation of correlatives*

Turning now to questions (ii) and (iii) about the placement of correlatives and the relationship they entertain with the correlate, there have been several proposals about these in the literature. These cluster in two families of approaches: the so-called *uniformity* accounts on the one hand and *non-uniformity* accounts on the other. Uniformity accounts defend a view that correlatives are derived from underlying headed relatives. Non-uniformity accounts posit that the derivations of headed relatives and correlatives are different.

### 5.2.1. *Uniformity accounts*

Uniformity accounts do not subscribe to the conclusion we presented at the end of section 2, namely that correlatives are fundamentally distinct both from headed and right extraposed relatives. Approaches to correlatives that argue for a uniform treatment between correlatives and other types of finite relatives can be found in the following works, all proposed for Hindi: Verma (1966), Junghare (1973), Kachru (1973), Wali (1982), Subbarao (1984), Bains (1989) and Mahajan (2000). In these proposals all relative clause types are derived from headed relatives, including correlatives. Correlatives start out as modifiers of a noun phrase and are taken to move to the left by adjunction. The head NP that is left behind after movement undergoes pronominalization and shows up as a demonstrative expression.

Among the uniformity accounts we need to dedicate special attention to Mahajan (2000), which is cast in the antisymmetry framework of Kayne

(1994). Mahajan argues that all types of Hindi relatives are headed relatives and should receive a head raising analysis. Thus, the relativized NP is generated inside the relative clause and is moved to an IP-initial position by scrambling. This scrambling step is followed by an optional movement of the NP into Sp,CP of the relative clause, leaving the relativizer behind in IP. The derivation of correlatives starts out with the building of a headed relative in these steps, too, and proceeds with the application of two more operations: scrambling of the whole relative clause to the left and some deletion operation in either the fronted relative or its copy. Deletion can apply to different parts of the structure (sometimes to non-constituents), deriving all the structures that surface as well-formed outputs. These structures are shown in the following representations (Rel stands for the relative marker; the DP containing Dem(onstrative) and a CP corresponds to the relative clause that has been scrambled to the beginning of the main clause IP):

(32)

- a. [<sub>DP</sub> Dem [<sub>CP</sub> [<sub>RelIP</sub> Rel NP ... ]]] [<sub>IP</sub> ... [<sub>DP</sub> Dem [<sub>CP</sub> [<sub>RelIP</sub> Rel NP ... ]]] ]  
 b. [<sub>DP</sub> ~~Dem~~ [<sub>CP</sub> [<sub>RelIP</sub> Rel NP ... ]]] [<sub>IP</sub> ... [<sub>DP</sub> Dem [<sub>CP</sub> [<sub>RelIP</sub> Rel NP ... ]]] ]  
 c. [<sub>DP</sub> Dem [<sub>CP</sub> NP [<sub>RelIP</sub> Rel ... ]]] [<sub>IP</sub> ... [<sub>DP</sub> Dem [<sub>CP</sub> NP [<sub>RelIP</sub> Rel ... ]]] ]  
 d. [<sub>DP</sub> ~~Dem~~ [<sub>CP</sub> NP [<sub>RelIP</sub> Rel ... ]]] [<sub>IP</sub> ... [<sub>DP</sub> Dem [<sub>CP</sub> NP [<sub>RelIP</sub> Rel ... ]]] ]

The scrambling step of the derivation explains why the correlate needs to be a definite item (although it says nothing about the obligatoriness of a demonstrative in it). Since only definite phrases can undergo scrambling, indefinite correlates are ruled out. Double spellout of the head NP is accounted for by allowing for various pronunciation possibilities for the nominal phrase as well. This NP undergoing movement to Sp,CP inside the relative clause can be spelled out twice, both inside RelIP in the moved copy of the relative and in Sp,CP in the original copy of the relative:

(33)

- [<sub>DP</sub> ~~Dem~~ [<sub>CP</sub> NP [<sub>RelIP</sub> Rel NP ... ]]] [<sub>IP</sub> ... [<sub>DP</sub> Dem [<sub>CP</sub> NP [<sub>RelIP</sub> Rel NP ... ]]] ]

The same instance of double spellout cannot happen in headed relatives, since, as Mahajan argues following Kayne (1994), two copies of the same item can only be spelled out simultaneously if they do not c-command each other. Postposed relatives, which in this account are also derived via the above derivational steps, followed by some remnant movement steps, are predicted to allow for a double spellout of the NP, too, since in this case there is no c-command relation between the two copies, either. This squares with the facts according to the judgments of Mahajan and speakers in Delhi he consulted, who accept double spellout of the head noun in postposed relatives. Thus, these speakers accept example (16b), which is considered ungrammatical in Srivastav (1991)/Dayal (1996) and Bhatt (2003):

- (34) vo laRkii lambii hai [jo laRkii khaRii hai]  
 that girls tall is REL girl standing is  
 'The girl who is standing is tall.'

It is important to note that Mahajan opens up the empirical domain of correlativization not only in reporting dialectal differences in the acceptability of cases like (34) (as well as the acceptability of multiple relatives on the right periphery, see fn. 4), but also in that he considers cases where the left peripheral relative is preceded by a demonstrative expression, cf. the structures in (32a,c). While these often occur in informal speech (Rajesh Bhatt p.c), they are usually not accounted for in theoretical works. A real life example corresponding to structure (32a) is provided in (35):

- (35) vo [jo aadmii sita-ko acchaa lagtaa hai] mujhe  
 that REL man Sita-DAT nice seem is I.DAT  
 vo pasand nahī: hai  
 that like not is  
 'I do not like the man who Sita likes.'

### 5.2.2. *Non-uniformity accounts*

The underlying idea of non-uniformity accounts of correlativization is that correlatives are fundamentally different from headed relatives, so much so that a uniform treatment of the two types is not feasible. Different incarnations of the non-uniformity approach can be found in Donaldson (1971), Downing (1973), Bach and Cooper (1978), Dasgupta (1980), Lehmann (1984), Keenan (1985), Andrews (1985), Srivastav (1991), Dayal (1996), Izvorski (1996) and Bhatt (2003). Of these, we only deal with the most recent four pieces of work in detail here, because in these the syntactic (and sometimes also semantic) analysis of the correlative construction is placed center-stage. In these proposals we find three basic types of approaches centering around the question of how the correlative clause combines with the main clause and what kind of relationship it entertains with its correlate. These approaches differ along the lines of two ingredients of the analysis, positing (i) base-generation vs. movement of the relative clause; (ii) local modification vs. binding of the correlate by the correlative clause.

In what can be termed the *high-adjunction & binding* account, proposed by Srivastav (1991)/Dayal (1996), correlatives differ from headed relative constructions in that the correlate phrase and the relative clause do not form a constituent at any point of the derivation. Instead, the correlative clause is base-generated adjoined to the main clause IP from the left. From its left adjoined position, the correlative binds the correlate, which is an ordinary phrase in the main clause. This binding relation is quantificational. The correlative behaves as a generalized quantifier and the correlate as a

variable, which is akin to an overtly spelled out A-bar trace. This configuration can be read off the structure in (36):

- (36) *high-adjunction & binding approach*  
 $[_{IP} [_{CorrelCP} \dots RelXP \dots ]_i [_{IP} \dots DemXP_i \dots]]$

Besides Srivastav (1991)/Dayal (1996), Bhatt (2003) also uses high adjunction for the derivation of multiple correlatives (see below).<sup>11</sup>

Evidence for the quantificational nature of the correlative comes from the observation that correlatives occupy a left-adjoined position that is similar to that of raised quantifiers. The trace-kind of behavior of the correlate on the other hand follows from the presence of locality effects between correlative and correlate. Such locality effects subsume island violations of the usual kind, exemplified by the CNPC violation in (37a), with actual data in (37b):

- (37) a.  $[_{CorrelCP}]_k [_{IP} \dots [_{DP} DP [_{RelCP} \dots DemXP_k \dots]] \dots ]$   
 b. \*[ jo vahaaN rahtaa hai] mujhe vo kahaani  
     REL there stay is I.DAT that story  
     jo Arundhati-ne us-ke.baare.me likhii pasand hai  
     REL Arundhati-ERG that-ABOUT write pleasing is  
     lit. Who lives there, I like the story that Arundhati wrote about  
     that boy.

For the semantic computation of the high-adjunction & binding account, see section 6.1 below.

An entirely different way of cashing out locality effects is found in what can be referred to as the *low adjunction & movement* account. This proposal, worked out in Bhatt (2003) for single correlatives, has it that the correlative modifies the correlate phrase locally by forming a complex adjunction structure with it in the base. From this low position, the correlative optionally moves out to adjoin to IP via an operation such as A-bar scrambling or QR. If the correlative moves, the correlate phrase can undergo optional scrambling as well:

- (38)  $[_{IP} [_{CorrelCP} \dots RelXP \dots ]_i [_{IP} \dots (DemXP_j) [\dots [t_i] DemXP_j] \dots]]]$

Since the low adjunction account operates with *movement* of the correlative to the left periphery, it predicts island effects of the kind observed in (37) to be the result of this movement operation. Other arguments in favor of the low-adjunction analysis come from reconstruction effects, both in the domain of condition C effects as well as pronominal binding facts. Here I exemplify these with a binding principle C effect (Bhatt 2003):

- (39) a.  $[_{CorrelCP} R-exp_i \dots ]_k [ pron_i DemXP_k \dots ]$

- b. \*[jo laRkii Sita-ko<sub>l</sub> pyaar kar-tii hai]<sub>k</sub> us-ne<sub>l</sub>  
 REL girl Sita-ACC love do is that-ERG  
*us-ko<sub>k</sub> thukraa di-yaa*  
 that-ACC reject give-PFV  
 'He<sub>i</sub> rejected the girl who loves Sita<sub>j</sub>.'

The name (*Sita-ko*) contained in the correlative cannot be coreferential with the pronoun (*us-ne*) in the matrix clause, which argues for a reconstruction step that takes the correlative back to a position c-commanded by this matrix pronominal. If correlatives originate from a DemXP-adjoined position and undergo obligatory reconstruction at LF, as shown in (40), the observed coreference relations are ruled out as a binding principle C violation.

- (40) [<sub>CorrelCP</sub> R-exp<sub>l</sub>. ... ]<sub>k</sub>[pron<sub>l</sub> [<sub>CorrelCP</sub> R-exp<sub>l</sub>. ... ] DemXP<sub>k</sub> ...]]

The most striking piece of evidence for the low adjunction & movement account comes from data whose relevance is somewhat underrated in other works (with the exception to Wali (1982)): the possibility of generating the correlative clause and the correlate as a constituent in overt syntax as well. The existence of such structures have been acknowledged as a possibility in Dayal (1996), who, quoting Wali (1982), cites the following case:

- (41) [<sub>DP</sub>[jo aye] *un-kaa kaam*] [<sub>DP</sub>[jo gaye ] *un-ke*  
 REL came they-GEN work REL came they-GEN  
*kaam-se ] behtar hai*  
 work-than better is  
 'The work of those who came is better than the work of those who left.'

As indicated by the bracketing, we find two pairs of correlative and correlate phrase forming a constituent DP in this sentence. A similar configuration is found in (42). This example also contains two correlative-correlate sequences, each sequence involving the correlative clause adjacent to its own demonstrative:

- (42) Ram-ne [ jo laRkaa tumhaare piichhe hai ]  
 Ram-ERG REL boy your behind is  
 [<sub>DemXP</sub> *us laRke-ko*] [ jo kitaab Shantiniketan-ne  
 that boy-DAT REL book Shantiniketan-ERG  
*chhaapii thii*] [<sub>DemXP</sub> *vo kitaab*] dii  
 print-PFV was that book give-PFV  
 'Ram gave the book that Shantiniketan had published to the boy behind you.'

Facts like this follow without further assumptions if we assume that correlative clause and correlate form a constituent at some level and can be moved as one constituent in the syntax. These remarkable complex DP-structures force us to allow for DP-adjunction for the correlative at least as a possibility, and together with the observed locality effects they clearly vindicate the low adjunction & movement analysis.

Multiple correlatives receive a distinct treatment in Bhatt's analysis, due to the fact that they behave differently from single correlatives both according to the evidence of locality effects and the impossibility of complex formation. Multiple correlatives do not give rise to DP-adjunction structures and they do not reconstruct into the main clause, either. There is no restriction on coreference between a pronoun in the matrix clause and a name contained in a multiple correlative adjoined to the clause, for example:

- (43) [jis-ne Ram-ko jise di-yaa ] us-ne us-se  
REL-ERG Ram-ACC REL-DAT give-PFV that-ERG that-INS  
us-kii taariif kii  
that-GEN praise did  
‘For x and y, such that x gave Ram to y, Ram praised x to y.’

This shows that multiple correlatives do not undergo movement to the left periphery, rather they are base generated adjoined to IP.

The observed locality effects have also gained a third kind of explanation in the literature. In Izvorski (1996), which discusses Hindi and South Slavic correlatives, the correlative clause is base-adjoined to the main clause and the correlate demonstrative phrase is argued to undergo focus movement to the left periphery, predicting locality effects. The movement of the correlate takes place to Spec,CP via A-bar movement, a step that is covert in Hindi and overt in Slavic, as Izvorski claims.

- (44) [CP [CorrelCP ... RelXP ... ] [DemXP<sub>i</sub>] [CP ... [~~DemXP<sub>i</sub>~~...]]

This *high adjunction & correlate-raising* account can be viewed as a combination of the two approaches mentioned above. It keeps the high, CP/IP-adjoined position for the correlative and takes care of locality effects via arguing for the raising of the DemXP in an A-bar manner. According to Izvorski, the movement step depicted in (44) is parameterized according to the properties of *wh*-movement in a given language: it takes place *overtly* in overt movement languages like Bulgarian and Serbian, and *covertly* in covert *wh*-movement languages like Hindi. Bhatt (2003) notes, however, that while this parametric account is theoretically elegant, covert correlate phrase movement is unlikely to take place in Hindi, as in this language finite clauses are islands to covert movement. Izvorski's account is also slightly improved upon by Lipták (2005) who shows that the overt movement step of the correlate phrase can also be a process of topicalization, which is an

option utilized in Hungarian (Lipták 2008) and in Serbian (Arsenijević this volume) as well.

### 5.3. Comparative correlatives

As briefly mentioned in section 2 above, comparative correlatives (CCs) are constructions expressing comparison between two clauses, of the type in (45) in English:

- (45) The more you read, the less you understand.

The first of the two clauses expresses a condition under which the second clause is true. Due to this conditional import, these sentences are also sometimes referred to as 'comparative conditionals' in some works, like in Beck (1997).

The correlative nature of these constructions is quite obvious in languages with correlatives, like Hindi. In these languages comparatives of this sort are expressed via the means of ordinary correlativization. Consider the following example (quoted from Den Dikken (2005), who attributes it to Rajesh Bhatt p.c.):

- (46) [jiiṭnaa    suuraḷ    čamk-aa]    utnii(-hii)    ThanD  
       how.much sun        shine-PFV    that-much(-only) cold  
       baRh-ii  
       increase-PFV  
       ‘The more the sun shone, the colder it got.’

In this example, just like in ordinary correlatives, we find a left peripheral relative clause adjoined to a main clause and linked to a demonstrative pronominal (*utnii(-hii)*). While this example does not pose any problem for a syntactic analysis, the underlying structure of the equivalent construction in other, non-correlative languages, like the English (45) is not evident at first sight, because the construction has some quirky properties that are difficult to explain rightaway.

Let us illustrate two of these. First, according to the evidence of locality effects, the '*the ...*' phrases that introduce each clause are fillers similar to ordinary *wh*-phrases in that they undergo movement to Sp,CP<sup>12</sup> and bind a trace:

- (47) a. \*The more Mary knows a man who  $t_i$  eats, the poorer she gets.  
       b. \*The more he eats, the poorer<sub>i</sub> he knows a woman who gets  $t_i$ .

At the same time, these phrases are not normal *wh*-phrases and cannot be subsumed under degree expressions of other types, like *so* or *all the more* either, argue Culicover and Jackendoff in Culicover and Jackendoff (1999).

The second quirky property concerns extraction. Although both clauses are similar to *wh*-clauses and thus should constitute islands, both clauses are extractable from in English:

- (48) a. This is the sort of problem which<sub>i</sub> the sooner you solve *t<sub>i</sub>*, the more easily satisfy the folks up at corporate headquarters.  
 b. The folks up at corporate headquarters are the sort of people who<sub>j</sub> the sooner you solve this problem, the more easily you'll satisfy *t<sub>j</sub>*.

Extraction should be less problematic for the second clause, as this clause functions as the main clause to which the first is subordinated to, as reflected by the choice of tag-questions, among other things:

- (49) The more we eat, the angrier you get, don't {you /\*we}?

Yet, if anything, extraction from the first clause in English CCs is easier than extraction from the second clause.

Concentrating on these quirky properties of the construction, Culicover and Jackendoff conclude that the English CC embodies a 'syntactic nut', a construction type that does not conform to principles of UG grammar. Instead, it is *sui generis* — at least when it comes to the *the*-phrases and the combination of the clauses. About the latter, it is concluded that both clauses of the comparative correlative have the status of coordinate clauses in the syntax, while in the semantics the first clause is subordinated.

To counter Culicover and Jackendoff's conclusion about the syntactic lawlessness of CCs, Den Dikken (2005) subjects correlative comparatives to meticulous scrutiny in a handful of languages, involving Dutch, German, Hungarian, Russian and various stages of English (see also Bhatt 2009 in the wake of Den Dikken's analysis for CCs in Greek). Taking the lead of the evidence in (49) for the subordinated nature of the first clause, and working his way into the microscopic structure of the *the*-phrases Den Dikken shows that the internal composition of CCs does obey UG principles and that this construction furthermore should be analyzed as genuine and cross-linguistically consistent correlative constructions. In these, we find the first clause as a relative clause adjoined to the second clause, with a basic structure as in (50):<sup>13</sup>

- (50)  
 [correlative clause [the more]<sub>i</sub> I read *t<sub>i</sub>*][main clause [ the more ]<sub>j</sub> I understand *t<sub>j</sub>*]

The correlative nature of the construction manifests itself in various ways, including the subordinate nature of the first clause as well as the fact that this construction is always bi-clausal, which the author relates to the fact that correlatives do not stack (compare to (27) above):

- (51) \*The more you eat, the fatter you get, the sooner you die.

Concerning extraction facts, Den Dikken shows that the above observed quirks are particular to English and do not characterize other languages. In German or Dutch, extraction can never take place from the first clause and can only take place from the second clause if that has the comparative phrases in initial position (in-situ placement of the correlate is also allowed in these languages). Such a state of affairs is entirely expected if CCs have an underlying structure as correlatives, but does not follow if they are coordinated clauses as suggested by Culicover and Jackendoff. The latter scenario would also make wrong predictions about extraction of predicate nominals from both clauses. These can extract out of clauses combined by ordinary coordination, but not out of comparative correlatives:<sup>14</sup>

- (52) a. the kind of doctor *Op* that [he would very much want to be *t*] but  
 [does not consider himself capable of becoming *t*]  
 b. \*the kind of doctor *Op* that [the more he wants to be *t*], [the less  
 able he will be able to actually become *t*]

Turning now to the nature of the fronted comparative phrase, its morphosyntax also complies with X-bar theory in Den Dikken's analysis. *The*-phrases in English and their cross-linguistic equivalents are run-of-the-mill degree expressions, DegPs, whose specifier contains a prepositional measure phrase. Evidence for such a complexity comes from modern Russian (cf. 53) or from 16th century English examples (cf. 54):

- (53) naskol'ko luchshe mashina nastol'ko ona dorozhe  
 by.how.much better car by.that.much it more.expensive  
 'The better the car, the more expensive it is.'  
 (54) by how much the lesse he looked for his discourse, by so much the  
 more he lyked it

As the Russian example clearly evidences, the comparative expression contains a relative operator in the first clause, and a demonstrative expression in the second. A parallel representation can also be assigned to the English example, as illustrated in (55).

- (55) a. DegP in correlative clause: relative phrase  
 [<sub>DegP</sub> [<sub>PP</sub> by [<sub>QP</sub> how much]] [<sub>Deg'</sub> the [<sub>AP</sub> lesse]]]  
 b. DegP in main clause: demonstrative phrase  
 [<sub>DegP</sub> [<sub>PP</sub> by [<sub>QP</sub> so much]] [<sub>Deg'</sub> the [<sub>AP</sub> more]]]

What makes comparative phrases somewhat peculiar in comparative correlatives is that parts of the DegP — the Deg head, the measure phrase or

the preposition introducing the measure phrase — need not be overt in some languages. In modern English *the*-phrases, for example, the measure PP is covert, and we only get to see the Deg head (*the*) and the comparative AP in the fronted comparative phrase.

While this discussion only concentrated on the most difficult puzzles that comparative correlatives present the theorist with, it is clear that these constructions can fruitfully be subjected to an analysis in terms of a correlative structure, concerning both the combination of clauses and the morphosyntactic composition of the relative clause.

## 6. Semantic approaches to correlatives

The semantic composition of correlative constructions requires special attention if one analyzes these along the lines of non-uniformity approaches. If correlative constructions are not assembled in the same way as headed relatives, the basic tenet of non-uniformity accounts, their interpretation must proceed differently from headed relatives, too — assuming a compositional syntax-semantics correspondence like Montague's approach.

The compositional interpretation for headed relatives, following Partee (1975), involves combining (both in the syntax and the semantics) the relative clause with a common noun, and applying the definite article to the result. As Bach and Cooper (1978) noticed, the same interpretation is not available for correlatives, since at the point where the correlative is inserted into the structure, the correlate DP has already been composed and interpreted. To solve this problem, Bach and Cooper assumed that all relative-modified nominals — whether next to their modifying relative clause or at a distance from it — have an implicit property variable (R), which gets filled in (via lambda-abstraction) by the relative clause. This allows the relative clause that is not a constituent of the head DP to be interpreted inside that DP. In this model, the difference between headed relatives and correlatives is that R gets filled in at the DP level in the case of ordinary headed relatives, and at the clausal level in the case of correlatives.

### 6.1. Dayal's (1996) approach to correlatives

A criticism of this uniform semantic approach to correlatives and headed relatives was provided in works by Veneeta Dayal in Srivastav (1991) and Dayal (1996). Using syntactic evidence about the distinct nature of correlativization and headed relative formation (see section 2 above) she has shown that correlatives are not ordinary noun modifiers, and thus a uniform account of headed relatives and correlatives is mistaken. Instead, correlatives instantiate a strategy based on a different interpretive mechanism, that of quantification. This conclusion suggests itself quite

naturally if we consider that (i) correlatives occupy a position where quantified phrases are interpreted in languages (i.e. IP adjoined position) (ii) the relationship between the correlative clause and its correlate shows typical properties of operator-variable relationships such as island violations (recall section 5.2.2.).

In Dayal's account, correlative constructions are interpreted according to the rules of quantification. The correlative clause is a generalized quantifier that needs to bind an argumental variable in the main clause. Since the correlative does not move out of the main clause, the argumental variable that it binds cannot be a trace, instead it has to be an overt pronominal. The correlate DP is such a pronominal expression (the demonstrative element inside being the variable), and can be considered similar to a phonetically realized trace, a resumptive pronoun.

What kind of quantifier is the correlative? As was shown in section 3, correlatives have a special meaning component: maximalizing semantics. Maximalization, when applied to degrees, restricts the set of degrees to the singleton set containing the maximal degree (if there is one). When applied to individuals, maximalization results in a definite reading, which means that the correlative is interpreted as a singular definite description denoting a unique individual when the relative operator has singular morphology, and a plural definite when the relative operator is plural — the exact same interpretation free relatives receive in Jacobson (1995). Correlatives can thus be considered generalized quantifiers over maximal individuals.

Uniqueness can be absent under two conditions: so-called quantificational variability effects (QVE) and relatives with an *ever*-type suffix bringing in free choice interpretation. Both occur with generic tenses only. QVE shows up with adverbs of quantification like *often*, illustrated in (56):

- (56) [jo laRkii mehnat kartii hai ] vo aksar safal  
REL girl effort do is that often successful  
ho-tii hai  
be-HAB is  
lit. Which girl makes an effort, she is often successful.  
'A unique girl who makes an effort is often successful./'Most girls  
who work hard are successful.'

As the translation shows, the sentence has two readings. Under the second, 'variable' reading there is no uniqueness: the correlative does not denote a unique girl. Dayal (1995, 1996) argues that we can preserve a uniqueness analysis if we treat quantifier variability via quantifying over situations. In this approach, the variable reading can be paraphrased as: 'most situations that involve a unique girl making an effort, are situations in which this unique girl is successful'. Uniqueness can be checked for minimal situations, so in cases where there are more girls making an effort, there will also be

minimal situations in which a single girl makes an effort. This way, we allow for uniqueness and at the same time we allow for the number of situations for *often* to quantify over.

The other apparent exception to uniqueness are correlatives with the particle *-bhii*. This has an interpretation similar to English *-ever*. This morpheme can have a free choice reading or it can indicate that the identity of the individual denoted by the relative is not known to the speaker:

- (57) [jo-bhii laRkii mehnat kartii hai] vo safal  
 REL-ever girl effort do is that successful  
 ho-tii hai  
 be-HAB is  
 'Whichever girl makes an effort, she is successful.'

As mentioned above, the effect here is also dependent on the tense of the clause. The absence of uniqueness only shows up on a generic interpretation of the sentence. If the relative has episodic tense, *-bhii* receives the 'unknown identity' interpretation:

- (58) [jo-bhii laRkii vahaaN khaRii hai] vo ravi-kii  
 REL-ever girl there standing is she Ravi-GEN  
 dost hai  
 friend is  
 'Whichever girl is standing there, she is Ravi's friend.'

This shows that the uniqueness effect is dissipated not by *-bhii* itself, but by genericity.

Before going on it has to be noted that free choice readings of correlatives are also available in other languages, sometimes even without an overt *-ever* suffix on the relative phrase. In a language like Hungarian, there is actually a tendency to interpret all correlatives with generic tense and what can be called a free choice interpretation:

- (59) [Aki szorgalmasan dolgozik], jutalmat kap.  
 REL.who diligently works reward gets  
 'Who works diligently will get a reward.'

Non-generic tense, on the other hand, just like in Hindi, requires a uniqueness interpretation:

- (60) [Aki először lépett be], azt nem ismerem.  
 who first entered in that.ACC not know.1SG  
 'I do not know the person who entered first.'

## 6.2. Semantics for single correlatives

Dayal (1996) follows Jacobson's (1995) study of free relatives in assigning correlatives the semantics of definite descriptions, and attributes definiteness to the complementizer of the relative clause. This complementizer is thought of as a special kind of definite determiner corresponding to a two-place operator. The role of this operator is to map the intersection of the properties designated by the NP in the relative phrase and by the predicate of the clause to the maximal individual within this intersection. The set of properties of this individual 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 property, with the correlate phrase construed as a variable inside it.

This approach can explain why correlatives are sensitive to the type of their correlate — a property we dubbed 'the demonstrative restriction' in section 2. Note first that headed relatives are not sensitive to whether there is a determiner in their head phrase, due to the fact that they attach to (and take scope over) the level of the noun only. The determiner layer builds in only after the noun has combined with the relative clause. In the case of correlatives, on the other hand, correlative clause and correlate DP have a different relationship: since the correlate DP is a bound variable, it needs to have a variable in its denotation. This is the demonstrative element, which can get bound from outside when it is not interpreted deictically. Definite DPs of other types, like proper names, are robustly impossible correlates, as these cannot vary with the relative clause.

Somewhat different alternatives to Dayal's account have been provided by Grosu and Landman (1998), Grosu (2000, 2002) and Gajewski (2008). These differ in where and how they take maximalization to be active in the relative clause — notably, the very aspect of any analysis that involves some kind of arbitrariness. Gajewski (2008), which is designed to account for multiple correlatives (see below), derives the maximality effect from the relative phrase instead of the relative complementizer. Grosu (2000, 2002) (following the insights of Grosu and Landman (1998)), assumes together with Dayal that the source of maximalization is the complementizer C, but considers this to be the effect of a feature [DEF], which is similar, but not equivalent to a definite article. The difference is that [DEF] applying to the relative CP does not shift its type either higher or lower, rather, it triggers the mapping of a set to a singleton set, thus preserving the type of the input. As a result of this feature, the relative CP is interpreted as the singleton set whose unique member is the output of a maximalizing operation. Further, Grosu & Landman (1998) differ from Dayal also in their treatment of the correlate. They do agree that there is a variable in the place of the correlate (bound by abstraction), but they take the correlate itself to contribute to the building of the quantificational correlative clause. They take this correlate phrase to be interpreted in the position of an external head of the correlative clause.

As we have briefly mentioned above in section 3, the Grosu-Landman proposal neatly explains the general tendency that correlatives do not stack<sup>15</sup>, with reference to the singleton status of CP. Stacking of relatives would require the intersection of the denotation of two sets. Restrictive relatives for example, which intersect with the meaning of their head, allow stacking. Maximalizing relatives, like correlatives, on the other hand, do not involve set intersection, as maximalization always creates a singleton set. Take for example two correlatives, each denoting a singleton set. If the two contain distinct members, their intersection is empty, and if they contain identical members, their intersection is identical, tautologous. In both cases the outcome of intersection is infelicitous and stacking is thus ruled out.

The Grosu-Landman analysis also explains why the correlate needs to be a definite phrase. The correlative is only compatible with determiners that do not single out subsets of the set denoted by the correlative. Since the relative CP denotes a singleton set, the correlate that is external to it can only be felicitous in case its implications are consistent with the uniqueness of CP's only member. Definite determiners and universals are consistent, but indefinites are not since they carry non-uniqueness implications. While the definite nature of the correlate is thus explained, it remains unclear in this account why the definite correlate needs to contain a demonstrative expression.

### 6.3. *Semantics for multiple correlatives*

Multiple correlatives require separate mention in any semantic analysis, as their properties are slightly different from single correlatives. Multiple correlatives contain two (or more) relative phrases, which correspond to two (or more) correlates in the main clause. The number of relative and correlate phrases has to match):

- (61) [jis laRkii-ne jis laRke-ke saath khelaa] us-ne  
REL girl-ERG REL boy-GEN with played that-ERG  
us-ko haraayaa  
that-ACC defeated  
lit. Which girl played with which boy, she defeated him.  
'The girl who played with a boy, defeated him.'/'Every girl defeated  
the boy she played with.'

As shown by the translation, the correlative need not refer to a single girl-boy pair, but can also quantify universally over multiple girl-boy pairs. The second option is interesting since the relative phrases are both singular. To derive this universal force of the correlative, Andrews (1985) suggested that the correlative has the same type of quantificational structure as a conditional. Replacing the relative phrases with an indefinite, we can recast the relative clause as a conditional and get the same universal meaning:

(62)  $\forall_{x,y} [\text{girl}'(x) \wedge \text{boy}'(y) \wedge \text{played-with}'(x,y)] [\text{defeated}'(x,y)]$

Dayal (1996), however, refutes this conditional-based analysis with two pieces of evidence. First, while correlatives need to match up with correlate phrases in a one-to-one manner, conditionals do not have such a matching requirement. Second, an analysis of correlatives as conditionals would entail that we predict that singular correlatives are always interpreted as universals, contrary to fact.

Dayal's analysis of multiple correlatives is a combination of her generalized quantifier approach to single correlatives and her analysis of multiple questions in Dayal (1996). The parallel with multiple questions is based on the observation that both multiple questions and multiple relatives have a universal meaning, and both denote functional relations.<sup>16</sup> The latter means that the first relative phrase needs to be exhausted (all girls had to play with a boy) and there has to be uniqueness in that for each member of the relative-phrase there can be no more than one pair (no girl can have played with more than one boy). Dayal proposes that multiple relatives differ from single ones in that the relative complementizer takes multiple heads and denotes a set of relations, not properties. So a multiple relative with  $n$  relative phrases denotes a set of  $n$ -place relations, determined by a unique function. The correlative combines with the main clause that in the case of (61) denotes a relation, due to the demonstratives that are abstracted over. This accounts for the matching requirement: quantification is only defined if the main clause also denotes an  $n$ -place relation, so it has to have  $n$  demonstratives. The uniqueness/maximalizing effect present in correlatives results in the above specified uniqueness condition on the number of pairs associated with the first relative phrase.

Gajewski (2008) puts forward an improvement over Dayal's analysis, by showing that it can be simplified. The way to simplify it is to follow Jacobson's (1995) analysis of free relatives even more closely in the derivation of the definite meaning: the two operations that derive it, maximalization and iota-shift need to be kept separate, and should be allowed to apply at different points of the derivation. Maximalization in this account is due to the semantics of the relative operator. This operator maps a predicate into a predicate over one individual (this is the same effect that is attributed to the feature [DEF] in Grosu and Landman 1998). Iota-shift is another operation that can apply to the maximalized predicate. It can raise the type of this predicate (denoting a singleton set) to an individual, denoting the unique member of this set. Gajewski shows that a double correlative can be derived by applying maximalization to the clausal node containing the lower relative phrase and the rest of the sentence. When the second relative phrase builds in, giving us pairs of individuals, the presupposition of this maximalization is projected (in the manner of Heim (1983)) and this gives rise to the observed uniqueness meaning (no girl has played with more than one boy). Before the correlative combines with the main clause, maximalization

happens again, now to the whole correlative, optionally preceded by a pluralization operation. When pluralization does not apply, the result of maximalization is a singleton set containing one pair of individuals. After iota-shift of this set and combination with the main clause, which is taken to be a two-place predicate just like in Dayal's account, we get a single pair reading. If pluralization takes place before the correlative is maximalized, the outcome is similar except that we get a set of pairs. This corresponds to the universal reading.

#### 6.4. *The relation between correlatives and conditionals*

Before closing this section, we need to turn to another area of research on correlatives, that which covers the relationship between conditionals and correlatives, discussed in various works on ordinary correlatives (Andrews (1985), Geis (1985), von Stechow (1994), Izvorski (1996), Cheng and Huang (1996), Dayal (1996), Bittner (2001), Bhatt and Pancheva (2006)) as well as on comparative correlatives (McCawley (1988), Michaelis (1994), Beck (1997), Culicover and Jackendoff (1999)). This area is an important field of study as there exist several interpretive and formal parallels between correlative and conditional constructions. There are morphological, syntactic and semantic similarities.

Concerning morphological marking, in languages where correlativization is a productive strategy correlatives and conditionals often use the same marker of subordination. As Cable (this volume) shows, Tibetan correlatives contain a particle *na*, as seen in (64), which is also productively used in conditional statements, like in (63):

- (63) [ Kyodrang    Lhasa la    'gro na ] nga    'gro gi            yin.  
       you                Lhasa DAT go if    I    go    NON.PST    AUX  
       'If you go to Lhasa, I will go there.'
- (64) [Khyodra-s    gyag gare nyos yod na ] nga-s    de    bsad  
       you-ERG    yak what buy    AUX if    I-ERG    that kill  
       pa            yin.  
       PERF    AUX  
       'I killed whatever yak you bought.'

A similar pattern is observed in Basque (Rebuschi this volume). In present day Basque conditionals use *ba-* 'if', while correlatives use *bait-* as a finite complementizer. According to the evidence of some texts, however, there have been quite many interchanges between the two forms at earlier stages of the language. At some stages, *bait-* could replace *ba-* and vice versa.<sup>17</sup>

Apart from complementizers, the relative pronouns and main clause correlates can also be selected from the same pronominal paradigms in languages. The following example from Marathi (originally from

Pandharipande (1997), quoted by Bhatt and Pancheva (2006)) shows this parallel very clearly. The first example is a conditional, the second a correlative construction:<sup>18</sup>

- (65) (*dzar*) tyāne abhyās kelā tar to pā  
 if he studying do.PST.3MSG then he pass  
 hoīl  
 be.FUT.3SG  
 'If he studies, he will pass (the exam).'
- (66) *dzo mānus tudzhyā śedzārī rāhto*  
 which man your neighborhood.in live.PRS.3MSG  
*to mānus lakhak āhe*  
 that man writer is  
 'The man who lives in your neighborhood is a writer.'

Parallels between conditionals and correlatives extend beyond the use of the same morphological markings or the selection of pronouns. In their syntax, the two kinds of construction also show many similarities. To start with a basic one, they both involve a bi-clausal structure with a subordinate clause adjoined to the main clause. As Bhatt and Pancheva (2006) show, sentence initial conditionals adjoin to CP/IP, just like correlatives. Furthermore, conditionals, just like correlatives, can be coindexed with a proform — this form in English is *then* — whose placement observes conditions also found with correlate phrases, see the details of a particular parallel concerning stacking possibilities in Bhatt and Pancheva (2006).<sup>19</sup>

Based on such syntactic parallels, Bhatt and Pancheva conclude that conditional clauses with *then* are correlative structures, and in line with this they are also interpreted just like correlatives. Semantically, the most obvious parallels between correlatives and conditionals are the maximization effects that characterize conditional clauses just as much as free relatives: they are both definite descriptions, the difference boiling down to the type of entity they denote. While correlatives are definite descriptions over individuals, conditionals are definite descriptions of possible worlds (Bhatt and Pancheva (2006)). A slightly different formulation is found in Bittner (2001), who is concerned with the logical representation of individuals and possibilities, from the point of view of centering theory. She shows that conditional clauses center a possibility, while correlatives center an individual. In the footsteps of these accounts, yet reversing the direction of assimilation, Arsenijević (this volume) argues that correlatives are a subcase of conditionals.<sup>20</sup> Based on the observation that Serbian correlatives and conditionals show parallel syntactic and semantic behavior, this work treats correlatives as a subtype of conditional clauses, a type that involves extreme non-specific wh-expressions in topic positions in the CP-domain. Conditionals in turn are analyzed as yes-no

relative clauses, thus coming a full circle and claiming in effect that conditionals are a subcase of relativization, just like in Bhatt and Pancheva's and Bittner's accounts.

The semantic parallel between conditionals and correlatives is demonstrated very clearly by the following Warlpiri example, where one and the same construction is actually ambiguous between a 'correlative', individual reading and a conditional 'possibility/possible world' reading (Bittner 2001, quoting Hale 1976):

- (67) Maliki-rli *kaji-ngki* yarlki-rni nyuntu  
 dog-ERG 'same.topic'.3SG.2SG bite-NON.PST you  
*ngula-ju* kapi-rna luwa-rni ngajulu-rlu.  
 dem-TOP fut-1SG.3SG shoot-NON.PST me-ERG  
 (i) 'As for *the* dog that bites you, I'll shoot *it*.' (individual-centered)  
 (ii) 'If a dog bites you, *then* I'll shoot it.' (possibility-centered)

As the interpretations show, the subordinate clause can denote either an individual (reading (i)) or a possibility (reading (ii)).

The kind of ambiguity indicated in (67) also arises in correlatives with generic or habitual tense in other languages. Depending on the language, the conditional reading can be predominant over the individual reading. This seems to be a case in Hungarian, or Slavic (Arsenijević, p.c.). Consider the following example and its predominant, free choice/conditional interpretation:<sup>21</sup>

- (68) Amelyik kutya közel jön hozzám, azt elkergetem.  
 REL.which dog close comes to.me that.ACC chase.away.1SG  
 'Which(ever) dog comes close to me, I'll chase it away.' = 'If a dog comes close to me, I'll chase it away.'

Note that the second reading resembles examples of 'donkey' anaphora: there is a covert universal operator whose restriction is the first clause and the main clause contains an E-type pronoun *azt* 'that-ACC'. Correlatives clearly differ from regular headed relatives in the availability of this donkey-type reading.

While such paraphrase relations between conditionals and correlatives might be suggestive of full equivalence, there are semantic differences between the two types of construction. An obvious one is that not all correlatives can receive a conditional-type free choice interpretation, but rather a definite interpretation denoting a single unique individual. A second difference concerns symmetric versus asymmetric readings in relation to the proportion problem of donkey sentences (Kadmon 1987). The problem concerns the anchoring possibilities of an adverb of quantification — whether it is anchored to one or all of the indefinites in a given sentence:

(69) If a farmer owns a donkey, he is usually rich.

The symmetric reading of (69) is one in which the adverb usually is anchored to both *a farmer* and *a donkey*. In this reading the sentence says that in most cases involving a farmer-donkey pair, the farmer is rich. In an asymmetric reading, the adverb is anchored either to *a farmer* only or to *a donkey* only, and not to farmer-donkey pairs. Now, Hindi correlative clauses (Cheng and Huang (1996), referring to Utpal Lahiri p.c.), can only have asymmetric readings. Conditionals on the other hand allow for a symmetric reading. This distinction argues for keeping the two types of constructions separate, as done for example in Cheng and Huang (1996), who demarcate Chinese ‘bare conditionals’, a Chinese construction whose semantics is parallel to (69), from Hindi-type correlative constructions on the basis of the presence vs. absence of the symmetric readings.

## 7. The contents of this volume

The articles in this volume make theoretical and empirical advances in the study of correlatives in the fields of syntax and semantics. All articles use the toolbox of generative theoretical syntax (in particular, the Government and Binding and Minimalist frameworks) in the study of the phenomenon, and many of them build on various existing theories of relativization or structure building. The empirical contribution of the articles is evident when we consider that the articles provide in-depth studies of particular languages, some of which have not been studied extensively in connection with correlatives. The languages covered are: Basque (Rebuschi), Dutch (Den Dikken), Hindi (Bhatt and Lipták), Hungarian (Bhatt and Lipták), Polish (Citko), Sanskrit (Davison), Serbian (Arsenijevic), Tibetan (Cable), Italian Sign Language (Branchini and Donati). With this array of language-particular studies, the present collection of essays drastically extends the scope of previous research whose focus fell exclusively on Indo-Aryan languages.

The articles are grouped in three sections according to the topic they place center-stage: the relation between correlatives and related constructions (Part I); the syntactic derivation of correlatives (Part II) and the explanation behind the matching effect (Part III).

The first group of articles (Part I) examines syntactic properties of correlatives in comparison with other constructions that are syntactically or functionally similar to correlatives: *wh*-questions, free relative clauses, conditionals and leftward extraposed headed relative clauses. The central question in these articles is to what extent correlatives share a common syntax with these constructions, and where the differences, when present, stem from.

The second group of articles (Part II) centers around the question how correlative constructions are derived in the syntax. The topics handled here concern the internal build-up of the correlative clause; its placement in the sentence; its relation with the correlate phrase as well as extraction possibilities out of correlative constructions.

The third group of articles (Part III) centers around a very specific property of correlatives: the matching requirement, which obtains between the relative phrase in the correlative clause and the correlate phrase in the main clause. One kind of matching discussed here is matching in number, that is, that there is always the same number of relative phrases as correlates. Another kind of matching that can be observed is a rather particular type of matching: case matching. This obtains between the relative phrase and the main clause correlate in correlative constructions expressing temporal relatives and, to a lesser degree, those expressing locative relations.

In what follows, the reader finds a summary of the contents of the volume.

## **Part I: Correlatives and related constructions**

The book's opening article, Barbara Citko's *What don't wh-questions, free relatives and correlatives have in common?* discusses the internal syntax of Polish correlatives (both standard and comparative correlatives) in comparison to two other *wh*-constructions: questions and free relatives. Similarities between these three constructions immediately meet the eye, as they all involve *wh*-fronting and by and large use the same range of *wh*-phrases. Differences, however, show up when we look at other properties, like the availability of multiple *wh*-movement, the possibility of left branch extraction and the presence of reconstruction effects.

Concerning these areas, correlative clauses pattern with questions and not with free relatives. Both correlatives and questions allow multiple occurrences of *wh*-phrases and superiority violations among these. They also allow left branch extractions of the type where the fronted *wh*-phrase extracts from a left branch of a noun phrase, stranding the NP behind. Reconstruction effects are also exhibited by both correlatives and questions. The fronted *wh*-phrase reconstructs into its original position, according to the evidence of anaphor binding, BP-C effects or variable binding. Free relatives on the other hand do not allow multiple *wh*-movement and left branch extractions and they show anti-reconstruction effects in the same contexts: they allow both reconstructed and non-reconstructed interpretations.

The paper shows that in these properties free relatives are exactly parallel to headed relative clauses, due to the fact that the two share a common underlying structure. In both cases the clause is dominated by a DP layer. This layer is filled with a DP that is generated externally in the case of

headed relatives, and with a *wh*-DP that is moved into this position in the case of free relatives. Correlatives and questions on the other hand are not headed by a DP-layer, they are headless CP structures, containing the fronted *wh*-phrase in Sp,CP.

As for the specifics of the derivation of headed relatives, the author argues for a matching analysis (also proposed in Citko 2001), in which the head DP is generated outside the relative clause. In this analysis, the *wh*-phrase, promoted from inside the clause, shows up without its NP subpart as a result of ellipsis applying under identity with the head NP. Free relatives are claimed to have a similar structure except that their external head is derived from the fronted *wh*-phrase that raises out of the CP into the dominating DP layer. This last step in the derivation explains why BP-C effects are missing in the case of free relatives: the *wh*-phrase in the DP cannot reconstruct back into the clause. The headed nature of free relatives also explains why they do not allow multiple *wh*-phrases. Since the clause cannot be headed by more than one head, this restricts the number of *wh*-phrases to one. The ban on left branch extraction arguably follows from the fact that the *wh*-phrase cannot strand its NP as the relative clause needs to have the nominal phrase in the head position.

While the comparison in Citko's article is prompted by syntactic similarities between questions, free relatives and correlatives, Georges Rebuschi's article, *Basque correlatives and their kin in the history of Northern Basque*, examines both syntactic and semantic "relatives" of correlatives. This article systematically compares Northern Basque correlatives to various types of free and headed relatives, *wh*-interrogatives and ordinary as well as so-called "no matter" conditionals. Besides documenting these in 400 years of language history, mostly reflected in a variety of Bible translations, the article sets out to see whether correlative clauses in Basque constitute a special type of sentences, or whether they can be subsumed under other types. The findings of the paper support a view that considers correlatives an independent construction, but one that shares many properties with other types.

Correlative clauses in Basque are *wh*-clauses introduced by a special complementizer *bait-*, which always appears enclitic on the sentence-final auxiliary. Correlatives always occur in the left periphery, linked to the main clause by a demonstrative pronominal, which is often preceded by a linker element, homophonous with the conjunction *eta* 'and'.

Semantically, correlatives are very close to another type of free relative in Basque, the so-called 'semi-free relative', which can also occur in the left periphery, but which is never connected to the main clause by means of an *eta* linker. Semi-free relatives are moreover different from correlatives in their internal syntax as well: semi-free relatives contain no *wh*-operator and exhibit a different kind of complementizer, *-en*. Last but not least, while correlatives are externally CPs, semi-free relatives are clearly DPs according to the evidence of case-marking differences.

Correlatives also share some, though not all, syntactic properties with headed *wh*-relatives (referred to as 'appositive' relatives in the paper) and interrogative *wh*-clauses. The C-domain of correlatives is similar to headed *wh*-relatives to the extent that it contains the same complementizer, but differs in the range of *wh*-phrases allowed: headed relatives, unlike correlatives, do not allow for the whole range of interrogative *wh*-expressions. Embedded interrogatives in this respect square better with correlatives, allowing for the same set of *wh*-elements, yet syntactically, the two have a different clause structure: while in interrogatives the *wh*-phrases are necessarily adjacent to the finite verb form, in correlatives they are not. So-called indefinite free relatives (clauses of the type *C'e [chi dice sempre di si]* there-is who says always of yes 'There is always someone who says yes' in Italian) do not share their internal or external syntax fully with correlatives, either, in Basque. This can be seen from the fact that unlike correlatives, they are typically postverbal and may contain no finite morphology or complementizers.

Apart from the above *wh*-constructions and relative constructions special attention is dedicated to the similarities between conditionals (both ordinary and "no matter" types) and correlatives. Such a comparison is interesting in the light of the literature alluded to in section 6.4 above, which argues that conditionals are a subkind of correlatives. In Basque, one finds both morphological and semantic evidence for such a view. The semantic equivalence between the two constructions is shown by the fact that in past centuries Latin conditionals have often been translated as correlatives, and correlatives as conditionals. Morphologically, the link can be established between the marking of the dependent clause. While conditionals use *ba-* 'if', and correlatives use the finite complementizer '*bait-*', there are quite many interchanges between the two forms. At different stages of the language *bait-* could replace *ba-* and *ba-* could replace *bait-*. Looking at morphological parallels of this type, the paper considers the validity of theories that derive the two forms from the same underlying source. It then argues, albeit tentatively, that the similarity between correlatives and conditionals is prompted by an overall semantic parallelism rather than by an underlying syntax.

The kind of semantic parallelism referred to in Rebuschi's article is the driving force behind Boban Arsenijević' paper, *{Relative {conditional {correlative clauses}}}*, which is an investigation into the relationship between correlatives and conditionals. The account found in this paper is partly similar to those that analyze conditionals as correlatives (Bhatt and Pancheva 2006), but goes one step further in that it completely assimilates the two clause types into one category. Conditionals are analyzed as yes-no relative clauses, restrictive clauses in which the truth value of a proposition is restricted. The proposition represented by the conditional clause restricts the set of worlds compatible with the proposition represented by the head clause. Syntactically, the locus of modification is a functional projection

called *WorldP*, the projection that specifies the truth value of clauses by containing the feature *world* with a value [actual] or [possible]. *WorldP* is often lexicalized in languages as forms of *then* when the clause hosts a conditional.

Once this analysis of conditionals is in place, the paper goes on to show, mostly on the basis of Serbo-Croatian correlatives, that correlatives are a subtype of conditionals as defined above. They are clauses that modify the actual/possible world content of the main clause, just like ordinary conditionals. The syntactic difference of course is that correlatives contain a *wh*-item, which this analysis treats not as a relativizer, but as an extreme non-specific item (in the sense of Farkas 2002), similar in meaning to free choice 'any' phrases. The fact that it can occur together with a conditional marker supports the analysis of correlatives as conditionals:

- (70) **Ko** na brdo **ak'** i malo stoji, više vidi od onog  
 who on hil if and little stands more see from that  
 pod brdo.  
 under hill  
 'The one who stands on a hill even a little bit sees more than the  
 one under the hill.'/'Anyone who stands on a hill even a little bit  
 sees more than the one under the hill.'

The *wh*-non-specific expression appears at the beginning of the clause due to its topic function. On its way to the CP, it lands in the *WorldP* projection of the conditional, to establish a dependency between the interpretation of the *wh*-expression and that of its clause. This results in the fact that the worlds denoted by the clause vary with the referents of the *wh*-expression. The correlative demonstrative in this analysis is a purely anaphoric item that entertains only a semantic, but no syntactic relation with the correlative clause.

The article *Relatively different: Italian Sign Language relative clauses in a typological perspective* by Chiara Branchini and Caterina Donati is the only article in this collection that does not argue *for* but *against* an analysis in terms of correlativization. The object of study in this article is relative clauses found in Italian Sign Language (LIS), the language of the Italian deaf community. The authors explicitly argue against an analysis of these constructions in terms of correlativization, as proposed in Cecchetto, Geraci and Zucchi (2006).

Italian Sign Language is a head-final SOV language. It employs a strategy for relativization involving a bi-clausal construction. Of the two clauses, the sentence initial clause is marked by two means. It is marked by a special sign, referred to as PE, which is coreferential with an NP inside the clause, realized through agreement in space. In addition, the relative clause is also marked by non-manual marking consisting of raised eyebrows, and tension of eyes and upper cheeks extending over all or a part of the relative

clause. The main clause to which this relative clause attaches contains a pronominal correlate or a gap, interpreted as coreferential with the NP the PE sign refers to.

Branchini and Donati show that the proper analysis of this construction treats the relative clause as extraposed to the left of the clause from the position of the correlate. The relative clause itself has a restrictive meaning and can be considered to be an internally headed relative clause, similar to those in Japanese in the analysis of Shimoyama (1999). A correlative analysis of the facts, such as the one put forward by Cecchetto, Geraci and Zucchi (2006), is thus misguided. This analysis has it that the relative clause is adjoined to the main clause, which contains an e-type pronominal correlate (never a full NP), possibly pro-dropped. PE inside the relative clause is a demonstrative moved to Sp,CP, whose role is to turn the relative clause into a generalized quantifier, similarly to the analysis of Hindi correlatives in Dayal (1996). The relative clause in this account is furthermore claimed to be appositive in meaning.

Branchini and Donati show that this analysis cannot be right for various reasons. To start with the last mentioned claim, the relative clause has restrictive semantics according to a battery of tests. Second, the relative clause is not a CP category, but a nominal one, evidenced by the fact that it can be modified by nominal modifiers like *first*, which in LIS resist an adverbial analysis. Nominalization is taken to be the result of the PE element, which acts as a nominalizer in other contexts as well. PE is thus analyzed as a D head, and is generated next to the NP inside the relative, where it can surface as well, at least for some signers. For the majority of signers though it moves from inside the relative clause to the head position of the clause, to create a dependency between two nominal positions, one internal and one external to the clause. This movement nominalizes the entire clause.

Concerning the nature of the alleged correlate phrase in the main clause, it is argued that this element cannot be a dropped pronoun, as it can be covert in cases where pro-drop is impossible, for example with oblique NPs. For these reasons, the correlate should better be analyzed as a trace, which can be either phonetically empty or spelled out as a resumptive pronoun. This trace is a trace of the relative clause that moved out of the main clause via extraposition to the left, evidenced by island sensitivity: the relative clause cannot escape from out of an island. The extraposed nature of the clause is further evidenced by the fact that the non-manual marking for relative clauses contains at least two components, raised eyebrows and tensed eyes, the latter of which appears to single out extraposed constituents in other contexts, too.

## Part II. The derivation of correlatives

The second part of this book contains three language-specific case studies of correlatives, centering around the question how correlative constructions are derived. This part commences with a paper *The syntax of the Tibetan Correlative* by Seth Cable, which explores the properties and structure of Tibetan Correlative constructions, as found in the Lhasa dialect of Central Tibet. Tibetan is a rigidly verb final language with a correlativization strategy. This strategy involves a left peripheral finite relative clause that involves a *wh*- or relative operator, interpretively linked to a demonstrative correlate in sentence-internal position. It is argued that such constructions are correlatives, and yield meanings similar to that of Hindi correlatives and English free relatives: either a universal reading or a definite one (see (59) and (60) above). An interesting property of the correlative clause in Tibetan is that it features an element that also functions as the conditional marker elsewhere, yet correlatives are not conditionals, for lack of full semantic parallels.

The bulk of the paper concerns itself with the structural analysis of single Tibetan correlatives. Following Srivastav (1991) and Bhatt (2003), the author considers the availability of three strategies for the derivation of the Tibetan correlative: (i) low attachment of the correlative CP to the correlative DP; (ii) low attachment of the correlative clause to the correlative DP followed by movement to IP-adjoined position; and (iii) high attachment to IP via base-generation. Cable shows that all three strategies can manifest themselves in the formation of Tibetan correlatives.

In some cases, the correlative is formed by low attachment, evidenced by the availability of coordination structures of the type where two correlative-correlate pairs are coordinated and form a constituent. IP-adjunction via movement (option ii) is evidenced by binding. Quantifiers that occur lower than the correlative clause can bind a variable inside this clause, suggesting that the correlative has undergone movement to its surface position. IP-adjunction via base-generation (option iii) seems to exist as well, as the relation between the correlative clause and the correlative DP is not island sensitive (the correlative DP can be found inside relative clauses of all types, with the correlative clause outside these). It is also possible to co-index an R-expression inside the correlative clause with a DP that occurs lower than the clause.

The paper closes with some speculations as to why Tibetan can employ all three possibilities side by side, while Hindi, as shown by Bhatt (2003), only allows for option (i) and (ii), at least in single relatives (multiple relatives use option (iii)). According to Cable, the answer to this cross-linguistic difference might lie in the distinct agreement properties of the two languages. While in Hindi, the correlative operator in the correlative CP agrees in phi-features with the correlative DP, in Tibetan it does not. According to Cable, only languages where there is no such phi-feature

agreement allow for variable attachment sites for the correlative, both a high one and a low one, without any preference for either.

While Cable's work uncovers derivational possibilities within one language, Alice Davison's article *Adjunction, features and locality in Sanskrit and Hindi/Urdu correlatives* aims to explain variation among two closely related languages: Sanskrit and Hindi/Urdu. Sanskrit being the predecessor of Hindi/Urdu, correlatives share quite many properties in the two languages, but differences are also attested. The basic tenet of the article is that the differences can be traced back to the general property of Sanskrit that it avoids embedding and uses juxtaposition instead. In Sanskrit, clauses are linked in a very loose paratactic way, without syntactic encoding of subordination. This results in the fact that correlatives are never found adjoined to a nominal phrase, a strategy allowed in Hindi/Urdu. Instead, Sanskrit correlative clauses can only adjoin at the clausal level. Clausal adjunction furthermore is also different in the two languages. In Sanskrit we find *symmetric* adjunction, while in Hindi/Urdu we find *asymmetric* adjunction. Asymmetric adjunction means subordination as we know it: the subordinate correlative clause (a CP) does not project in category when it adjoins to the host clause (a TP). Symmetric adjunction on the other hand means that either clauses can project. According to the paper, this happens because the adjunction site is different in this case: the correlative (a CP) adjoins at the CP level. The two types of adjunction bring about a difference in c-command possibilities: in symmetric adjunction, but not in asymmetric adjunction, both CPs c-command the constituents of the other clause.

Evidence for the symmetric adjunction analysis of Sanskrit correlatives comes from various considerations. One involves the occurrence of sentence-oriented particles like *indeed*, *surely*, *furthermore*, which are characteristic of independent clauses. These particles occur in the clause initial string of clauses and fill head positions in the CP domain.<sup>22</sup> Interestingly, in the realm of correlative constructions, such particles can be found both in the correlative clause and the main clause. This evidences that the correlative clause is a CP itself, and it adjoins at the level of the CP. If Sanskrit would use asymmetric adjunction just like Hindi and adjoin the correlative CP to the main clause TP, the relative clause would be preceded by such particles of the clause-initial string. But sentences of this kind are impossible in Sanskrit.

The paper puts forward the claim that a well-formedness condition requiring that the correlative clause c-command the correlate, assumed to be operative in Hindi/Urdu but inoperative in Sanskrit, can furthermore explain differences in stacking. Hindi/Urdu does not allow correlatives to stack, Sanskrit on the other hand does. Davison takes stacking to be a configuration where two relatives adjoin to each other before adjoining to the main clause, a configuration in which the first relative does not c-command into the main clause. It is shown that this stacking configuration is

only allowed in languages where the correlative does not need to c-command its correlate phrase, as is the case in Sanskrit.

The same condition also rules out iterated relative clauses of the sort where one correlative clause finds its correlate in a non-adjacent clause. Such combinations are out in Hindi/Urdu but good in Sanskrit, due to the fact that in Sanskrit correlative need not c-command the correlate.

The last paper in Part II, Marcel den Dikken's article *Comparative correlatives and successive cyclicity* focuses on a special and more widely occurring type of correlatives: comparative correlatives (see section 4 and 5.3 above). Within the realm of such constructions, the paper deals with one particular aspect of comparative correlatives in Dutch: locality. The author investigates to what extent comparative conditional phrases can undergo long-distance movement and how their behavior with respect to locality reflects on the nature of the comparative correlative construction.

The paper starts by painting the empirical and theoretical lie of the land of Dutch comparative correlatives. Partly building on earlier work, Den Dikken argues that the head clause in Dutch comparative correlatives can be an IP or a CP, the difference depending on its root vs. embedded nature. Corresponding to this categorial difference, the position of the correlative clause and that of the comparative correlate in the main clause varies as well: the correlative clause attaches either to the main clause IP (in embedded contexts) or to the main clause CP (in root ones); the correlate phrase on the other hand either undergoes movement to Sp,CP or adjunction to IP. These ingredients of the analysis, coupled with the requirement that the fronted correlative particle and the sentence-initial relative clause must always be adjacent, give us all observed word order possibilities within the main clause: possible V2 effects when the correlate adjoins to IP, and lack of V2 when the correlate is in Sp,CP.

The same ingredients of the analysis are also instrumental to the analysis of locality effects. In the latter domain, the two clauses of the Dutch comparative correlative construction behave differently when it comes to long-distance movement of the comparative degree phrase: the relative clause freely allows for movement of the degree phrase, while extraction from the main clause results in degradation for many speakers. The judgments are sensitive to various factors, including the choice of the correlative particle used ([+WH] or [-WH] phrases), the finite/non-finite distinction in the clause, and word order. The article shows that the observed patterns neatly fall into place once it is assumed that whenever the comparative lands in SpecCP (as it does in the relative clause), long-distance dependencies are grammatical, due to successive-cyclic movement through intermediate SpecCP positions. When the comparative lands in an IP-adjoined position (as it often does in the headclause), severe locality restrictions emerge. These results are entirely predictable from the Principle of Unambiguous Binding (Müller & Sternefeld (1993)), a principle that

regulates movement dependences by ruling out variables that are both bound from an A-bar specifier and an A-bar adjunction position.

### **Part III: The matching effect**

*On the matching requirement in correlatives* Tommi Tsz-Cheung Leung sets out to discuss the requirement that regulates the distribution of relative phrases and demonstrative phrases in the correlative and the main clause respectively. In most cases, correlatives exhibit perfect matching between these items in both single and multiple cases. On the one hand, we find exactly as many relative phrases as demonstrative ones, on the other, the two share syntactic features such as category features, number and gender features.

Existing accounts of correlatives have difficulties in accounting for matching in the case of multiple correlatives, since in this case the correlative clause cannot entertain a local relation with both demonstrative phrases at the same time, a local relation that would be necessary for the sharing of features. The new proposal put forward in this paper postulates that the required local relationship is possible nevertheless but crucially does not obtain between the correlative clause and the demonstrative, rather, it obtains between the relative phrase itself and the demonstrative expression. In this account, the local relationship is established at the base, where the relative XP and the demonstrative XP form what is called a "doubling constituent" in which the two parts are in a "contextual relation" in the sense of Vergnaud (2003). Contextual relatedness roughly corresponds here to the idea that at some derivational stage the elements should be grouped together. Feature sharing between the relative phrase and the demonstrative is thus accounted for, similarly to the cases of feature checking between a head and its complement or a specifier and a head in the minimalist program, relations which can also be thought of as cases of contextual relations.

Starting from an underlying doubling constituent [*Relative phrase-Demonstrative correlate*], the surface word order observed in correlatives is derived via movement. The relative phrase moves out of the doubling constituent leaving the demonstrative behind. This step is similar to movement accounts of floating quantification (as in Sportiche 1988), resumption (as in Boeckx 2003) or antecedent-pronoun relations (as in Kayne 2002). The difference from these accounts is that the movement of the relative phrase needs to proceed via special means, that of *sideways movement* (in the sense of Nunes 2004) since the target position of movement is inside the correlative clause, subordinated to the main clause. An elegant feature of this account is that it can handle single and multiple correlatives in the same fashion. In the case of multiple relatives, the derivation starts out from multiple occurrences of Relative phrase-

Demonstrative correlate doubles and involves the application of multiple sideway movements.

Having seen properties and possible explanations of the general matching effect in correlatives, the article by Rajesh Bhatt and Anikó Lipták, *Matching effects in the temporal and locative domains* turns to a particular — and yet undocumented — kind of matching observed in correlative constructions: case matching. This kind of matching, which is studied in Hindi and in Hungarian, does not apply to ordinary correlatives that denote individuals, but shows up in correlatives that abstract over times and locations. In such correlatives, both single and multiple, the case on the relative pronoun has to be identical to the case on the correlate expression in the main clause. To illustrate, take the Hungarian example in (71): if the temporal connective TILL is present on the relative pronoun, it has to be present on the correlate phrase, too.

- (71) *Ameddig* János alszik, {*addig* /\* *akkor*} Mari hazajön.  
when-TILL János sleeps then-TILL then Mari comes.home  
lit. Till John sleeps, {till then Mari comes home / \*at that time Mari comes home}.

Due to this matching requirement, the combinations *when–then*; *till when – till then*; *since when – since then* are well-formed. Non-matching combinations are ungrammatical, with the exception of *when–till then*, *when–since then*, which are possible in Hindi but not in Hungarian. In the realm of locative correlatives, facts are somewhat similar in Hungarian: case matching is obligatory, although violations give rise to milder ungrammaticality. Hindi, on the other hand, shows no matching effects whatsoever.

The paper offers speculations on the explanation behind this peculiar matching requirement. It shows that this phenomenon is not morphologically conditioned like in the case of ordinary free relatives, where matching is a way of solving the morphological conflict that arises because the relative pronoun has to carry both the case assigned to it inside the relative clause (internal case) and the case assigned to the free relative as a whole (external case). Since in the case of correlatives internal and external case are carried by two distinct items, the relative phrase and the correlate phrase respectively, matching is never predicted to occur. The observed pattern in the realm of temporal/locative correlatives is more likely to have a semantic explanation, to be found in the fact that *when*-clauses denote a different type of temporal entity than *till/since when*-clauses. While the latter denotes an interval, the former denotes a point of time. This constrains their possible combinations with time denoting *then* vs. interval denoting *since/till then* phrases.

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<sup>1</sup> Here and in the examples below, the kind of Hindi orthography is used that represents retroflexes by capitalization, nasal vowels by following the vowel by the capitalized nasal, and long vowels by the doubling of the vowel. The glosses used in the text are as follows: ACC: accusative; AUX: auxiliary; COM: comitative; COMP: complementizer; DAT: dative; ERG: ergative; GEN: genitive; FUT: future; HAB: habitual; INF: infinitive; INS: instrumental; NON.PST: non-past; PART: partitive; PFV: perfective; PL: plural; POT: potential; PRS: present; PROG: progressive; PROSP: prospective; PST: past; SG: singular; REL: relative morpheme, 1/2/3: person.

<sup>2</sup> For an overview of the semantics of correlatives, which is different from that of headed clauses, too, see sections 3 and 6 below. In these sections it will be shown that correlatives are neither restrictive nor appositive, rather they represent a third type, that of definite or “maximalizing” relatives.

<sup>3</sup> The third option, where the nominal only occurs in the relative clause is possible in correlatives, too. Concerning the same in headed relatives, Srivastav (1991)/Dayal (1996) considers these ungrammatical, but Mahajan (2000) accepts them:

- (i) %vo [jo laRkii khaRii hai] lambii hai  
 that REL girl standing is tall is  
 'The girl who is standing is tall.'

<sup>4</sup> Mahajan (2000) holds a different view here. For him (and some Delhi speakers he consulted), (16b) and (18) are grammatical sentences.

<sup>5</sup> According to Srivastav (1991), fn. 15, right-peripheral multiple relatives are fine for some speakers but need special intonation. Mahajan (2000) finds these completely grammatical even without special intonation.

<sup>6</sup> In Lehmann's (1984) functional classification of relative constructions there is a fifth type, extraposed relatives. Extraposed and correlatives form a natural group of "co-relatives", which, unlike prenominal relatives, postnominal relatives and internally headed relatives are not subordinated to a nominal, but rather are satellites to another clause.

<sup>7</sup> Dayal (1996) also recognizes that correlatives are neither restrictives ('noun modifiers') nor appositives, but instantiate a distinct type, relatives that are definite, displaying

uniqueness/maximality effects. She argues that correlatives share this property with free relatives and internally headed relatives. As Grosu and Landmann (1998) and Grosu (2002) have shown, internally headed relatives are not uniform in this respect: only the Quechua-type internally headed relative clause (also found in Japanese, Korean or Navajo) can be said to be maximalizing.

<sup>8</sup> Maximalization does not only occur in relative clause constructions, but other types of constructions, too, like plural anaphora (Evans 1980, Kadmon 1987), questions (Groenendijk and Stokhof 1982, Rullmann 1995) and comparatives (von Stechow 1984).

<sup>9</sup> See section 5.2.2 for some cases where the correlative adjoins to a nominal category.

<sup>10</sup> Anderson (2007b) considers topicality a special function, which is restricted to correlatives in languages where there is also an unrestricted alternative strategy of relativization available. In such languages correlatives can specialize to take up a topical discourse role.

<sup>11</sup> A partly similar account was proposed by Rebuschi (2003) for Northern Basque, with the difference that correlatives in this account do not behave as generalized quantifiers.

<sup>12</sup> That the position of the comparative phrase is Sp,CP is evidenced by the possibility of spelling out the complementizer *that* in both clauses:

(i) The more that you read, the less that you understand.

This “doubly-filled comp” violation is another quirky property of the CC construction in English.

<sup>13</sup> Abeillé and Borsley (to appear) note that cross-linguistic consistency of CCs is not absolute, thus (50) might not be applicable in all languages. Some languages might use different strategies for the expression of contents similar to that of comparative correlatives. An example might be French, which does not pattern with English CCs in that the first clause in a CC construction is not a relative clause and seem to be coordinated to the second clause. Among some other pieces of evidence, Abeillé and Borsley remark that the construction can even contain a coordinator between the two clauses:

(i) Plus je lis (et) plus je comprends.  
 more I read and more I understand  
 'The more I read, the more I understand.'

It is interesting to note in this context that the presence of coordinators would not in and of itself argue against the correlative nature of the construction, as optional coordinators are not unknown in the realm of correlatives. Burushaski (Tiffou and Patry 1995) and Basque (Lipták and Rebuschi to appear) exhibit them:

(ii) AmenmoiNga bariN écam (ka) mo gusmoiNa\_ γare saila yét.  
 which.COM words do.FUT.1SG and the woman.COM with walk do.not  
 'Do not walk with the woman with whom I talk.'

(iii) Nork ere huts egiten bait du, (eta) hura Peiok  
 who.ERG ever mistake doing COMP AUX and that Peio.ERG  
 zigortuko du.  
 punish.PROSP AUX  
 'Who(ever) makes a mistake, Peio will punish him.'

<sup>14</sup> With the help of this example Den Dikken shows that multiple extraction out of CCs is a case of a parasitic gap construction, and not ATB-movement.

<sup>15</sup> I refer to this as a tendency, since Sanskrit (Davison (this volume), mentioned also in Lehmann (1984)) is an exception. Davison argues that the availability of stacking is not semantically but syntactically conditioned. She takes stacking to be a configuration where the two relatives adjoin to each other before adjoining the main clause. Such a structure is only allowed in a language where the correlative does not have to comply with the requirement that it has to c-command its correlate. If two CPs adjoin to each other, one of them, namely the one that does not project, does not c-command into the main clause.

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Sanskrit, which has no c-command requirement allows for stacking. Hindi on the other hand has the c-command requirement, consequently, stacking is not allowed.

<sup>16</sup> Dayal notes that the functional reading of correlatives is only available when the main clause can also denote a relation. When that is not the case, like in the following example quoted by McCawley (1992), we get a single pair interpretation:

- (i) [jo laRkii jis laRke-se baat kar rahii hai] ve ek saath  
REL girl REL boy-INS talk do.PROG is they together  
sinemaa jaayeNge  
movie go.FUT

'Which (particular) girl is talking to which boy, they will go to the movies together.'

Gajewski (2008, fn. 3) notes without illustration that exhaustivity and uniqueness of the pairing can be missing in other contexts, too, for some speakers.

<sup>17</sup> Lafon (1996) suggests that *ba-* and *bait-* originate from the same morpheme, a positive assertive particle *bai* 'yes'. See Rebuschi (this volume) for more details and objections to this hypothesis.

<sup>18</sup> Not all correlative languages express conditionals with a correlative structure. Hindi, for example, does not.

<sup>19</sup> Arsenijević (this volume) points out that conditionals and correlatives show the same kind of embedding possibilities in Serbian. For instance, they cannot be embedded in a relative clause and can only be embedded under verbs of saying/believing under special conditions.

<sup>20</sup> Andrews (1985) also cashed out the idea that correlatives are conditionals in the analysis of multiple relatives. The parallel between the two is semantic: the meaning of the correlative can be captured by replacing the relative phrases with an indefinite, and recasting the relative clause as a conditional. Such a conditional analysis for multiple relatives, however, is unlikely to be on the right track as this account undergenerates the possible meanings. Next to this universal meaning, multiple correlatives can also have a non-universal meaning where they denote a single pair of individuals.

<sup>21</sup> This kind of free choice readings are also available in Hindi *-bhii* clauses as was noted above. In this language, generic tense is also required for this reading.

<sup>22</sup> This string of particles are completely impossible in either main or dependent clauses in Hindi/Urdu.