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LOCALITY IN CORRELATIVES*

ABSTRACT. Correlativization seems to be an intrinsically *non-local* strategy, where the Correlative clause can appear discontinuous from the noun phrase it modifies. I show that correlative constructions in the Modern Indo-Aryan languages nevertheless display locality effects. The nature of these locality effects depends upon whether the correlative clause involves a single relativization ('Simple') or mutiple relativizations ('Multi-Head'). The generalization that emerges is that a Correlative clause must be merged as locally as possible to the phrase that it modifies. Simple correlatives modify DPs and so they start adjoined to the DP that they modify and then are fronted to an IP-adjoined position. Such an approach is able to explain the hitherto unexplained sensitivity of the correlative-modified phrase relationship to islands. Multi-Head Correlatives modify IPs and therefore they start adjoined to the smallest IP that contains the variables bound by the Multi-Head Correlative, followed by optional movement to the clause-initial position. My proposal argues that Simple Correlatives and Multi-Head Correlatives involve different derivational histories. This difference in derivational history is then used to account for the many differences in their syntactic behavior. Finally, the 'Condition on Local Merge' from which this analysis follows is shown to have cross-linguistic support.

1. GOALS

The goal of this paper is to provide the proper analysis of Correlative constructions in the Modern Indo-Aryan languages. Correlativization, exemplified in (1), is a relativization strategy that is characteristic of the Modern Indo-Aryan languages.[1] The basic features of a Correlative

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[1] Unless explicitly indicated otherwise, all non-English examples are from Hindi. Abbreviations: Rel – Relative Pronoun; Dem – Demonstrative; Rel-XP – an XP headed by a

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construction are shown in the schema in (1a′) – there is a Correlative clause that contains a Relative Phrase (henceforth Rel-XP). The Correlative clause is associated with a matrix clause that contains a Demonstrative Phrase (henceforth Dem-XP). Correlatives can be Simple Correlatives (cf. 1a) or Multi-Head Correlatives (cf. 1b), depending upon whether the Correlative clause contains one Rel-XP or more.[2] (The Dem-XP(s) associated with the Correlative Clauses in (1a, b) are italicized.)

(1)a′. Simple (= single Rel-XP) Correlative:
$[_{CorCP} \ldots \text{Rel-XP}_i \ldots]_i \; [_{IP} \ldots \text{Dem-XP}_i \ldots]$

a. [[jo CD]$_i$ sale-par hai]$_i$ Maya [*us CD-ko*]$_i$ khari:d-egi:
Rel CD sale-on be.Prs Maya.F Dem CD-Acc buy-Fut.F
Maya will buy the CD that is on sale.
(Lit. '[Which CD is on sale], Maya will buy that CD.')

b′. Multi-Head Correlative:
$[_{CorCP} \ldots \text{Rel-XP}_i \ldots \text{Rel-YP}_j \ldots]_{i,j}$ $[_{IP} \ldots \text{Dem-XP}_i \ldots \text{Dem-YP}_j \ldots]$

b. [jis-ne$_i$ jo$_j$ kar-na: cha:h-a]$_{i,j}$ [*us-ne$_i$ vo$_j$* ki-ya:]
Rel-Erg Rel do-Ger want-Pfv Dem-Erg Dem do-Pfv
For x, y s.t. x wanted to do y, x did y.
(Lit. 'Who wanted to do what, he/she did that.')

Characterising the exact manner in which the Correlative clause is associated with the matrix clause in Simple and Multi-Head Correlatives is one of the major goals of this paper. It will be shown that Simple Correlatives are base-generated adjoined to the Dem-XP and can optionally be scrambled away from the Dem-XP to an IP adjoined position.

(2) $[_{IP}[_{CorCP} \ldots \text{Rel-XP}_i \ldots]_i \; [_{IP} \ldots [t_i \; \text{Dem-XP}_i] \ldots]]$

In contrast, Multi-Head Correlatives are base-generated adjoined to the IP and can optionally be scrambled away from this IP.

(3) $[_{IP}[_{CorCP} \ldots \text{Rel-XP}_i \ldots \text{Rel-YP}_j \ldots]_{i,j}$ $[_{IP} \ldots \text{Dem-XP}_i \ldots \text{Dem-YP}_j \ldots]]$

relative pronoun (includes relative pronouns); Dem-XP – an XP headed by a demonstrative (includes demonstratives); Acc – Accusative; Dat – Dative; Erg – Ergative; Neg – Negation; Prs – Present; Pst – Past; Pfv – Perfective; Impfv – Imperfective; Prog – Progressive; Hab – Habitual; Ger – Gerund; Obl – Oblique; 1 – 1st Person; 2 – 2nd Person; 3 – 3rd Person; F – Feminine; M – Masculine; N – Neuter; Sg – Singular; Pl – Plural.

[2] Multi-Head Correlatives could just as well be called multi-Rel-XP correlatives.

I will also show that the differences between Simple and Multi-Head Correlatives follow if we assume that the structure building operation of Merge applies in as local a manner as possible.

1.1. *Plan*

The paper starts with a brief introduction to the various relativization strategies that are available in the Indo-Aryan languages: postnominal English-type Relative clauses, prenominal Non-finite Relative clauses, and Correlatives. In particular, the differences between English-type Relative clauses and Correlatives will be discussed.

Two potential structures for simple Correlative Constructions will be discussed: the non-movement/IP adjunction structure proposed by Srivastav (1991) and the movement/Dem-XP adjunction structure that will be argued for here.[3]

According to the Dem-XP adjunction structure, the Correlative clause is base-generated adjoined to the Dem-XP. It can then be optionally moved to an IP-adjoined position. The Dem-XP adjunction structure will be shown to be implausible for Multi-Head Correlatives and, for these, both analyses (Srivastav's and mine) assume an IP adjunction structure. Since my analysis assigns different structures to Simple Correlatives and Multi-Head Correlatives, one might expect certain phenomena to treat Simple and Multi-Head Correlatives differently. I show that this is indeed the case.

Section 3 shows that the Dem-XP adjunction structure is needed independently of the analysis being proposed here. The existence of island constraints between the Correlative clause and the Dem-XP is used to argue that the Correlative clause moves from its base position (adjoined to the Dem-XP) to an IP adjoined position. Assuming that the Correlative clause is moving also helps us to explain an otherwise mysterious constraint that prohibits the fronting of two Correlative clauses. Further evidence for movement comes from the existence of Reconstruction effects which show that the Correlative clause can (and in some cases must) be interpreted lower in the structure than where it appears. The phenomenon of Rel-XP deletion in Dakkhini, Gujarati, and Marathi is introduced in section 4 as an example of another syntactic process that discriminates between Simple and Multi-Head Correlatives.

Section 5 discusses why we find these differences between Simple and Multi-Head Correlatives. My proposal is that these differences follow if we assume the Condition on Merge, according to which the structure building operation of Merge applies in as local a fashion as possible. Section 5

[3] An anonymous reviewer notes that my proposal bears some resemblance to Mahajan (2000)'s analysis of Correlatives.

concludes with a discussion of some phenomena in Bulgarian, Modern Greek, and Hindi that receive a straightforward explanation if we assume the Condition on Merge. Section 6 provides a short summary, raises some new questions, and concludes this paper.

2. Relativization Strategies in Indo-Aryan

Indo-Aryan languages use the following relativization strategies (cf. Masica 1991 for a survey; also see Masica 1972; Keenan 1985).

2.1. *English-Type Relative Clauses (ERC)*

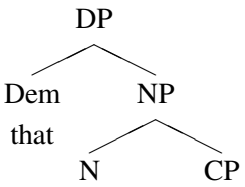
English-type Relative clauses, which are always postnominal, are available in most Indo-Aryan languages.[4]

(4) NP with Relative Clause

[$_{DP}$ vo [$_{NP}$ **kita:b** [$_{CP}$ jo sale-par hai]]] achchhi: hai

Dem book Rel sale-on be.Prs good.F be.Prs

That book which is on sale is good.



book‘which is on sale’

English-type Relative Clauses can be extraposed yielding structures like the following:

(5) Right adjoined Relative Clause

[$_{DP}$ vo [$_{NP}$ **kita:b**]] achchhi: hai [$_{CP}$ jo sale-par hai]

Dem book.F good.F be.Prs Rel sale-on be.Prs

That book is good which is on sale.

[4] The exceptions are Southern Konkani, Saurashtri, and Sinhalese.

2.2. *Non-Finite Relative Clauses*

Non-finite Relative clauses, which are always prenominal, are available in all Indo-Aryan languages. They can be based on a participle or on an adjectival form.

(6) Prenominal non-finite Relative Clause

a. Perfective participial
mɛ̃-ne [vo [$_{RelCl}$ pi:la: paṛ gaya:] **phu:l**] utha: liya:
I-erg Dem yellow fall GO-Pfv flower lift TAKE-Pfv
I picked up the flower that had become yellow. (from Kachru 1973)

b. Imperfective participial
[[$_{RelCl}$ chal-ti:] **ga:ri:**]-se mat utro
move-Impfv.F vehicle.F-from Neg descend-Imp
Do not descend from the moving vehicle. (from Hook 1979)

c. Adjectival
mɛ̃ kal [[$_{RelCl}$ Ram-ko darshan paṛha:-ne
I yesterday Ram-Acc philosophy tech-Ger.Obl
va:le **addhya:pak**]-se mil-a:
Adj.Obl teacher-with meet-Pfv
I met the teacher who teaches Ram philosophy yesterday.

In most Indo-Aryan languages, only the (highest) subject position can be relativized in non-finite Relative clauses. The fact that only the subject position can be relativized is sometimes obscured. For example in (7), which involves a non-finite Relative Clause based on the past participle of a transitive verb, it seems as if the direct object position has been relativized.

(7) [[(Avi-dwaaraa) kal kaaṭ-e] peṛ] neem-ke
Avi-by yesterday cut-Pfv.Pl tree Neem-Gen.Pl
the
be.Pst.Pl
The trees cut (by Avi) yesterday were Neem trees.

However, the non-finite clause in (7) has passive syntax as is shown by the fact that the logical subject is realized through a *by*-phrase. The ‘direct

object' is actually the grammatical subject of the non-finite clause and the relativization is therefore still on the subject position.

The exceptions to the generalization that only the (highest) subject position can be relativized in a non-finite Relative Clause are Dakkhini, (arguably) Gujarati, Marathi, Southern Konkani, Saurashtri, and Sinhalese. In these languages, non-finite relative clauses allow for direct objects (= 8a), adjuncts (= 8b), and subjects of embedded clauses (= 8c) to be relativized.

(8) Marathi examples from Pandharipande (1997)

a. Relativization of direct Object
[[$_{RelCl}$ tū pāṭhawlelī] **sāḍī**] surekh āhe
you send-PastPart-sf saree-sf beautiful is
The saree which you sent is beautiful.

b. Relativization of a place adverbial
[[$_{RelCl}$ mī rāhāt aslela] **ghar**] khī dzuna
I live-pres be-PastPart-N.Sg house-N.Sg very old
āhe
is
The house in which I am living is very old.

c. Relativization of subject of a finite sentential complement
[[$_{RelCl}$ rām-ne [pikle āhet] sāNgitlele] **ã:mbe**]
Ram-Erg ripe are tell-PastPart-Pl.M mangoes-3Pl.M
āmhī wikat ghetle
we buy take-Pst-3Pl.M
We bought the mangoes which Ram told us were ripe.

2.3. *Correlatives*

Correlatives are exemplified below:

(9) [$_{CorCP}$ . . . Rel-XP$_i$ . . .]$_i$ [$_{IP}$ . . . Dem-XP$_i$ . . .] (= (1a))
[jo sale-par hai] Maya *us Cd-ko* khari:d-egi:
Rel sale-on be.Prs Maya.F Dem CD-Acc buy-Fut.F
Maya will buy the CD that is on sale.
(Lit. 'What is on sale, Maya will buy that CD.')

A correlative construction consists of a Correlative clause and a Matrix clause. The Correlative clause contains a Rel-XP (*jo*) and the matrix clause contains a Dem-XP (*us CD-ko*).[5] The Correlative Clause (in square brackets) must appear to the left of the Dem-XP it is associated with (in italics), but it does not have to be either adjacent to its Dem-XP or clause-initial.

2.3.1. *Crosslinguistic Distribution of Correlatives*

The following is a non-exhaustive list of languages where correlative clauses are found: Hittite (Berman 1972; Raman 197), Warlpiri (Hale 1976; Keenan 1985), Medieval Russian (Keenan 1985), Old English (Curme 1912), South Slavic: Bulgarian, Macedonian, and Serbo-Croatian (Izvorski 1996), Sanskrit (Andrews 1985), Dravidian: Kannada (Sridhar 1990), Malayalam (Asher and Kumari 1997), and Tamil (Asher 1982), and the Modern Indo-Aryan languages with the exception of Southern Konkani, Saurashtri, and Sinhalese: 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), Oriya (Sahoo and Hellan 1998), Punjabi (Bhatia 1993), Sindhi (Trumpp 1872).

Keenan (1985) (following Downing 1973; see also Comrie 1981) notes that Correlative constructions are limited to verb-final languages, and in particular to 'loose' verb-final languages. These languages permit some NPs, especially heavy NPs, to occur in postverbal positions.[6]

2.3.2. *Multi-Head Correlatives*

There can be more than one Rel-XP in the Correlative clause. For each Rel-XP in the Correlative clause, there must be an associated Dem-XP in the matrix clause.[7] Such Correlatives are called Multi-Head Correlatives.

[5] Under certain circumstances that will be discussed in seciton 5.3, the Dem-XP can be non-overt. Further, in some Indo-Aryan languages (e.g., Gujarati, Marathi), but not others (e.g., Hindi, Punjabi), the Rel-XP can also be non-overt (see section 4).

[6] An anonymous reviewer points out that the existence of Correlative constructions in the South Slavic languages that are not verb-final is a counterexample for the above generalization that Correlative constructions are limited to verb-final languages.

[7] See McCawley (1992) for a discussion of some systematic exceptions to this requirement.

(10) Multi-Head Correlatives:
$[_{CorCP}\ldots$Rel-XP$_i\ldots$Rel-YP$_j\ldots]_{i,j}$ $[_{IP}\ldots$Dem-XP$_i\ldots$Dem-YP$_j\ldots]$

a. Marathi
[jya mula-ne$_i$ jya muli-la$_j$ pahila]$_{i,j}$ [tya mula-ne$_i$ tya muli-la$_j$ pasant kela]
Rel boy-Erg Rel girl-Acc saw Dem boy-Erg Dem girl-Acc like did
For boy x, girl y s.t. x saw y, x liked y.
(Lit. '[Which boy saw which girl], [that boy liked that girl]')

b. Hindi (= (1b))
[jis-ne$_i$ jo$_j$ kar-na: cha:h-a]$_{i,j}$ [*us-ne$_i$ vo$_j$* ki-ya:]
Rel-Erg Rel do-Ger want-Pfv Dem-Erg Dem do-Pfv
For x, y s.t. x wanted to do y, x did y.
(Lit. 'Who wanted to do what, he/she did that.')

Multi-Head Correlatives are found in all the Indo-Aryan languages that have Correlatives.

2.3.3. *Differences between English-Type Relative Clauses and Correlatives*

Srivastav (1991) points out that several syntactic properties distinguish English-type Relative clauses from Correlatives. Some of these properties are discussed here. Any reasonable theory of relativization should account for the syntactic differences between English-type Relative clauses and Correlatives while capturing the semantic similarity between these two relativization strategies.

It is well known that the head NP of a relative clause in English cannot be repeated inside the relative. Thus we can say *the book which Mary read*, but not *the book which book Mary read*. Why this is so is the subject of much debate – explanations range from the obligatory use of the head-raising analysis of relative clauses to the existence of an 'obligatory deletion under identity' rule that deletes the relative clause internal head (cf. Vergnaud 1974; Kayne 1994; Sauerland 1998; Bianchi 1999; Bhatt 1999; among others). English-type relative clauses and extraposed English-type relative clauses in the Indo-Aryan languages also do not allow repetition of the head NP inside the relative clause.

(11)a′. English-type Relative Clause:
$\ldots[_{NP}$ N $[_{RelCl}\ldots]]\ldots$

a. Aamir $[_{NP}$ **CD** ko $[_{RelCl}$ jo (***CD** sale-par hai]]
Aamir CD Acc Rel CD sale-on be.Prs
khari:d-ega:
but-Fut.MSg
Aamir will buy the CD which (*CD) is on sale.

(11)b′. Extraposed English-type Relative Clause:
$[_{IP}\ldots[_{NP}$ $N]_i\ldots]$ $[_{RelCl}\ldots]_i$

b. Aamir **CD** ko khari:d-ega: $[_{RelCl}$ jo (***CD**) sale-par hai]
Aamir CD Acc buy-Fut.MSg Rel CD sale-on be.Prs
Aamir will buy the CD which (*CD) is on sale.

On the other hand, the head NP can be repeated inside the Correlative clause (cf. 12).

(12) [jo (**CD**) sale-par hai] Aamir us **CD-ko** khari:d-ega:
Rel CD sale-on be.Prs Aamir Dem CD-Acc buy-Fut.MSg
Aamir will buy the CD that is on sale.
(Lit. 'Which (CD) is on sale, Aamir will buy that CD.')

The head NP in (12) is *CD* and it can appear inside the Correlative clause.

A Dem-XP is required in the matrix clause associated with a Correlative clause.

(13) [jo CD sale-par hai] Aamir *(us) (CD) ko khari:d-ega:
Rel CD sale-on be.Prs Aamir Dem CD Acc buy-Fut.MSg
Aamir will buy the CD that is on sale.
(Lit. 'Which CD is on sale, Aamir will buy *(that) (CD).')

No such requirement holds of English-type Relative clauses (cf. 11).[8]

Perhaps the most striking difference between Correlatives and English-type Relative Clauses is the fact that a Correlative clause can contain more than one relative pronoun (cf. 10). This is not possible with English-type

[8] There are some systematic exceptions to the Dem-XP requirement on Correlatives. If the DP associated with the Correlative clause is modified by, or is, *sab/dono/ti:nõ/*. . .

Relative clauses, irrespective of whether they are extraposed or not (cf. 14).[9]

(14)a. Extraposed English-type Relative clause

*[us laṛki:-ne$_i$ us laṛke-ko$_j$ pasand ki-yaa] [jis-ne$_i$ jis-ko$_j$ dekh-aa]

Dem girl-Erg Dem boy-Acc like do-Pfv Rel-Erg Rel-Acc see-Pfv

*That girl liked that boy, who saw whom.

b. Non-extraposed English-type Relative Clause

impossible to construct

'all/both/all-three/...' (but not *do/kuchh/adhiktam* 'two/some/most'), then it need not contain a demonstrative.

(i) [jo laRkiyã: khaRii hẼ] [sab/dono/*do/*kuchh lambii hẼ]

Rel girls standing.F be.Prs.Pl all/both/two/some tall.F be.Prs.Pl

The girls who are standing are all/both/*two/*some tall.

This exception follows from the analysis proposed in this paper – for independent reasons, a Correlative Clause can form a constituent with Dem-XPs and *sab/dono/ti:nõ/...* 'all/both/all-three/...' but not with *do/kuchh/adhiktam* 'two/some/most'). Thus, there is just no way to derive the offending cases in (i). It still remains to explain why Correlative clauses can form a constituent with *sab/dono* 'all/both' but not with *do/kuchh* 'two/some'. A comment that Srivastav (1991) makes concerning Sportiche (1988)'s proposal that floating quantifiers contain a covert demonstrative seems promising.

There are also cases where the Dem-XP that would be associated with the Correlative clause is not overtly represented in the matrix clause.

(ii) [jo CD sale-par hai] achchha: hai

Rel CD sale-on be.Prs good.MPl be.Prs

[Which CD is on sale] is good.

Such cases are discussed in section 5.3.

[9] The derivational link between Extraposed Relative clauses and Non-extraposed Relative Clauses is used by Dayal (1996, p. 197, fn. 5) to explain the unavailability of Multi-Head Extraposed Relative clauses (cf. 14a). (14a) is ungrammatical because of the impossibility of its source, the corresponding Multi-Head Non-extraposed Relative clause (cf. 14b). The exact nature of the operation of Extraposition that relates embedded Relative clauses to extraposed Relative clauses is not clear to me. But it does seem clear that it is not A'-scrambling, which is what moves Correlative clauses. Extraposition is subject to stricter constraints – the extraposition has to be to a clause-final position (cf. Dayal (1996, p. 154, ex. 6) and it is subject to the Right-Roof Constraint (Ross 1967) (cf. Dayal 1996, p. 170).

The existence of Multi-Head Correlatives and the non-existence of Multi-Head English-type Relative Clauses shows that the former cannot be derived from the latter. In other words, Correlatives cannot be treated as embedded relative clauses that have been moved to the left. In this section, we have seen other ways in which correlatives and English-type Relative clauses differ, such as the demonstrative requirement on correlatives and the constraint on the repetition of the head NP in English-type Relative clauses. These differences also would not follow in any straightforward fashion from an account that related Correlative clauses to English-type Relative clauses through movement.

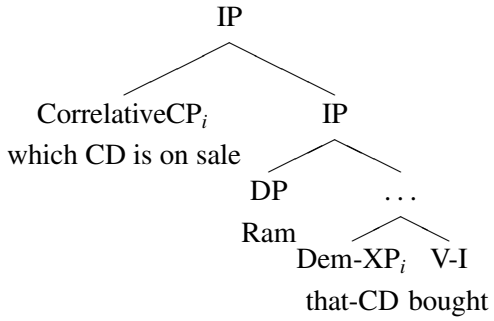
2.4. *Structures Proposed for Simple Correlatives*

In this section, two different ways of handling Simple Correlatives will be introduced. I will refer to these two ways as Option 1 and Option 2.

2.4.1. *Option 1: Base-Generation in an IP-Adjoined Position*

Option 1 assumes that the primary structure for Simple Correlatives involves IP adjunction. In particular, the Correlative Clause is base-generated adjoined to IP. Option 1 has been argued for extensively by Srivastav (1991) and Dayal (1996). It is exemplified by the tree in (15).

(15) IP adjunction:
'[$_{IP}$[which CD is on sale], [$_{IP}$ Ram bought that CD]]'

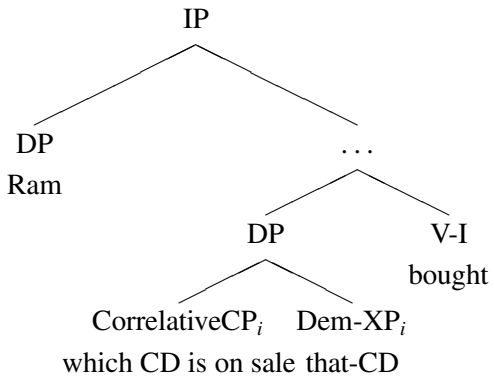


The Correlative clause is given the semantics of a Generalized Quantifier. It binds a variable (the Dem in the Dem-XP) from its IP adjoined position.[10]

In addition, to handle a limited number of examples, a second structure which involves adjunction to a Dem-XP is proposed.

[10] An anonymous reviewer wonders why it is possible to bind demonstratives in Hindi when they resist a bound interpretation in other languages. Cf. the following contrast from German.

(16) Dem-XP adjunction
'Ram bought [[which CD is on sale] that CD]'



The two structures are not related derivationally. Thus, Option 1 postulates two distinct structures for Simple Correlatives.

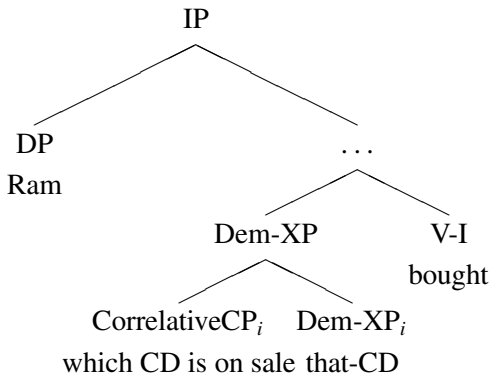
2.4.2. *Option 2: Base-Generation in a Dem-XP-Adjoined Position*
According to Option 2, the Correlative Clause in a Simple Correlative is always generated (in an A'-position) adjoined to the minimal maximal projection containing the demonstrative. The discontinuous structure is derived by overt 'QR'/A'-scrambling.

(i) (from Wiltschko 1998, exs. 1 and 4)
a. Maria hat ihn/den gesehen.
Maria has him/d-pron seen
Maria has seen him.

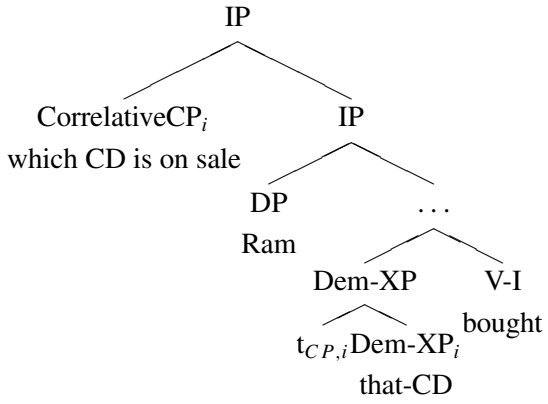
b. Jeder Mann$_i$ glaubt, daß er$_i$/*der$_i$ dumm ist.
every man believes that he/d-pron stupid is
Every man$_i$ believes that he$_i$ is stupid.

I believe that Hindi differs from German in the relevant respect because Hindi does not have third person pronouns that are distinct from (distal) demonstratives. Distal demonstratives in Hindi serve as third person pronouns both in their deictic and bound usage (cf. 23). The situation in other Modern Indo-Aryan languages, in particular Bengali, is more nuanced. See Bagchi (1994) for details.

(17) Dem-XP adjunction
'Ram bought [[which CD is on sale] that CD]'



(18) IP adjunction, via movement:
'[which CD is on sale]$_i$, [$_{IP}$ Ram bought [t_i that-CD$_i$]]'



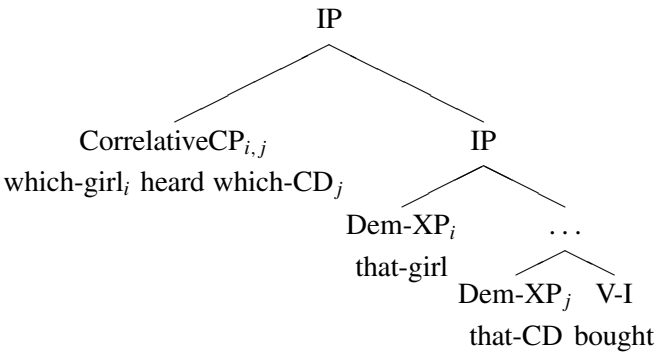
Under Option 2, there is only one structure for Simple Correlatives. The word order where the Correlative Clause appears clause-initially, or more generally discontinuous from the Dem-XP it is associated with, is derived via A'-movement of the Correlative clause.

2.5. *Structures Proposed for Multi-Head Correlatives*

For Multi-Head Correlatives, the Dem-XP adjunction structure is not an alternative – there is only one Correlative clause and two demonstrative heads. The Correlative clause can only be adjoined at the IP-level or higher.[11]

[11] An anonymous reviewer questions this assumption and suggests the following alternative: the Multi-Head Correlative clause is Merged with both Dem-XPs and then

(19) IP adjunction:
'which girl heard which CD, that girl bought that CD'



Both Options 1 and 2 postulate IP adjunction structures for Multi-Head Correlatives. Option 1 assigns very similar IP adjunction structures to both Simple Correlatives and Multi-Head Correlatives. In addition, it needs a distinct Dem-XP adjunction structure for certain Simple Correlatives. Option 2 assigns distinct structures to simple and Multi-Head Correlatives: Simple Correlatives are base-generated adjoined to a DP containing a demonstrative (optionally followed by movement), while Multi-Head Correlatives are base-generated adjoined to IP.

In principle, Option 1, Option 2, or a combination of the two, could be used by the grammar. Our goal is to determine what the state of affairs actually is. Which option does the grammar utilize? And can we then provide a general explanation behind the choice made by the grammar?

As we have noted above, Options 1 and 2 differ in how they handle simple and Multi-Head Correlatives. Option 1 provides a unified analysis for Simple and Multi-Head Correlatives and has an auxiliary analysis for Dem-XP-adjoined Simple Correlatives. Option 2 provides different analyses for Simple and Multi-Head Correlatives. Now if Option 2 is correct, we expect to find phenomena which discriminate between Simple and Multi-Head Correlatives. We will see in the discussion that follows that this is indeed the case and that the differences we find between Simple and

undergoes Across-The-Board (ATB) movement to its surface position. I do not consider this alternative for the following reasons: (i) this ATB movement would need to be obligatory. The structure we get by not doing ATB movement with a Multi-Head Correlative clause adjoined to both the Dem-XPs is strikingly ungrammatical. This is in contrast to Simple Correlatives where the non-movement variant is perfect. (ii) ATB movement in non-coordinate structures does not seem to be attested in Hindi. (iii) It seems that the relationship between a Correlative Clause and the Dem-XP(s) it is associated with must be established at point of Merge. The alternative analysis violates this requirement. For the empirical argument behind (iii), see section 3.3.4.

Multi-Head Correlatives find a natural explanation under Option 2 but not under Option 1.

The differences between Option 1 and Option 2 can be summarized schematically as follows:

(20)a. Simple Correlative 1: $[_{CP} \ldots$ Rel-XP $\ldots]_i$ [$\ldots$ Dem-XP$_i$ $\ldots$]
Option 1: IP adjunction
Option 2: the CP is generated adjoined to [Dem-XP] and moves to the clause-initial position

b. Simple Correlative 2: $\ldots$ [$[_{CP} \ldots$ Rel-XP $\ldots]$ Dem-XP] $\ldots$
Option 1: the CP is generated adjoined to Dem-XP
Option 2: the CP is generated adjoined to Dem-XP

c. Multi-Head Correlative: $[_{CP} \ldots$ Rel-XP$_i$ Rel-XP$_j$ $\ldots]_{i,j}$ [$\ldots$ Dem-XP$_i$ Dem-XP$_j \ldots$]
Option 1: the CP is generated adjoined to IP
Option 2: the CP is generated adjoined to IP

The two analyses differ in how they handle the cases under 'Simple Correlative 1', i.e., Simple Correlatives that appear discontinuous from the Demonstrative phrase they are associated with. Option 1 assimilates this case to Multi-Head Correlatives, while Option 2 assimilates this case to the cases of Simple Correlatives where the Correlative clause forms a constituent with the demonstrative phrase in the underlying representation.

3. Arguments for movement of the Correlative Clause

Option 1 has been argued for extensively by Srivastav (1991) and Dayal (1996). Option 2 has not previously been argued for in its current form though it has certain similarities with Wali (1982). According to Option 2, Simple Correlatives discontinuous from the Dem-XP they are associated with are derived by movement from their demonstrative phrase adjoined position. Since their derivation involves overt syntactic movement, we expect the derivation to be subject to the usual constraints on syntactic movement, e.g., islands. Appropriately, a demonstration of the island-sensitivity of the derivation of correlatives follows.

3.1. *Island Effects*

We start with a demonstration that the relationship between a Correlative clause and the associate demonstrative phrase can be long-distance. (21) shows that the Correlative Clause and its associated Dem-XP can be separated by a finite clause.

(21) [Correlative-CP]$_i$ [$_{CPfinite}$ Sita thinks that [$_{CPfinite}$ ... Dem-XP$_i$ ...]]

[jo larki: TV-par ga: rah-i: hai]$_i$ [Sita soch-ti: hai
Rel girl TV-on sing Prog be.Prs Sita.F think-Hab.F be.Prs
[$_{CPfinite}$ ki vo$_i$ sundar hai]]
that Dem beautiful be.Prs
Sita thinks that the girl who is singing on TV is beautiful.

In principle, an arbitrary number of finite clauses can intervene between the Correlative clause and its associated demonstrative. However, the Correlative clause and its associated demonstrative phrase cannot be separated by islands (cf. Dayal 1996, p. 183, ex. 44).

(22) *[Correlative-CP]$_i$ [$_{IP}$ ... [$_{NP}$ NP [$_{RC}$ ... Dem-XP$_i$ ...]] ...]

[jo vahã: rah-ta: hai]$_i$ mujh-ko [vo kaha:ni: [$_{RC}$ jo
Rel there stay-Hab be.Prs I-Dat that story.F Rel
Arundhati-ne us-ke-baare-mẽ likh-ii]] pasand hai
Arundhati-Erg Dem-about write-Pfv.F like be.Prs
*Who lives there, I like the story that Arundhati wrote about that boy.

The ungrammaticality of (22) shows that the relationship between the Correlative Clause and the associated demonstrative phrase cannot be reduced to just variable binding. Variable binding does not display island effects.

(23) Variable binding into a Relative Clause: no island effects

a. Every boy$_i$ likes [the story [$_{RC}$ that Arundhati wrote about him$_i$]].

b. har laṛke-ko$_i$ [vo kaha:ni: [$_{RC}$ jo Arundhati-ne
every boy-Dat that story.F Rel Arundhati-Erg
us-ke-baare-mẽ$_i$ likh-ii]] pasand hai
Pron-about write-Pfv.F like be.Prs
Every boy$_i$ likes [the story [$_{RC}$ that Arundhati wrote about him$_i$]].

Since we find island effects, we can conclude that the relationship between the Correlative clause and the Demonstrative cannot just be variable binding. Furthermore, since correlatives display sensitivity to islands, we can conclude that we have movement. This conclusion raises the question: given that there is movement, what is it that is moving?

At this point we have two options: either the Dem-XP moves covertly or the Correlative CP moves overtly. I will investigate the possibility of the demonstrative phrase moving covertly first.[12] We know from the work of Izvorski (1996) that demonstrative pronouns associated with correlatives in South Slavic languages (Bulgarian, Macedonian, and Serbo-Croatian) move overtly to [Spec, CP] in the matrix clause.

(24) Movement of Dem is obligatory (Bulgarian: from Izvorski 1996)

a′. [Correlative-clause]$_i$ [$_{IP}$ Dem-XP$_i$ … t_i …]

a. [Kolkoto pari iska]$_i$ *tolkova$_i$* misli če šte i dam
how-much money wants Dem-much thinks that will her give-1Sg
She thinks that I'll give her as much money as she wants.

b′. *[Correlative-Clause]$_i$ [$_{IP}$ … Dem-XP$_i$]

b. *[Kolkoto pari iska]$_i$ misli če šte i dam *tolkova$_i$*
how-much money wants thinks that will her give-1Sg Dem-much

The overt movement of the demonstrative phrase is sensitive to island effects.

(25) *[Correlative-Clause]$_i$ [$_{IP}$ Dem-XP$_i$ … [$_{Island}$ … t_i …]] (Bulgarian)

[12] These two options are not mutually exclusive. Bulgarian has been argued by Izvorski (1996) to use the Dem-XP movement option. We will show that Simple Correlatives in Hindi use the Correlative CP movement option. But this does not mean that the Dem-XP movement option is never used in Hindi. Multi-Head Correlatives will be shown in section 3.3.4 to involve both overt interclausal Correlative CP movement and covert intraclausal Dem-XP movement.

*[Kakto im kazah]$_i$ *taka*$_i$ čuh [$_{NP}$ sluha
how them told-1Sg Dem-way heard-1Sg the-rumor
[$_{CP}$ če t_i sa postâpili]]
that are done
I heard the rumor that they had acted the way I had told them to.

Izvorski (1996) suggests that this account should generalize to the Indo-Aryan languages despite the absence of overt demonstrative movement. She proposes that the island effects follow from LF-movement of the demonstratives. Izvorski's account is attractive because it relates the difference in surface word order between correlatives in Indo-Aryan and correlatives in South Slavic to an independently motivated distinction between the two language groups. Indo-Aryan languages are (with the exception of Kashmiri) *wh-in-situ*, while the South Slavic languages have overt *wh*-movement. So it seems reasonable that the demonstrative phrases which move overtly in South Slavic move covertly in Indo-Aryan.

Despite the attractiveness of Izvorski's account, it turns out to be untenable. Izvorski's account involves covert movement of the demonstrative phrase over a finite clause. However, there are good arguments that show that finite clauses in Hindi constitute islands for covert movement (cf. Mahajan 1990; Srivastav 1991; Dayal 1996).

(26) *wh*-word in embedded clause

a′. non-finite clause, wide scope question reading available
[$_{IP}$ ... [$_{NonFiniteClause}$ ... Wh-XP ...]]

a. Ram [kis-se mil-na:] cha:h-ta: hai
Ram who-with meet-Ger want-Hab be.Prs
Who does John want to meet?

b′. finite clause, wide scope question reading not available
[$_{IP}$ ... [$_{FiniteClause}$ ... Wh-XP ...]]

b. Sita jaan-tii hai ki Radha kis-se mil rahi:
Sita know-Hab.F be.Prs that Radha.F who-with meet Prog.F
hai
be.Prs
Sita knows who Radha is meeting with.
Not available: 'Who does Sita know that Radha is meeting with?'

An *in-situ wh*-phrase can take scope out of a non-finite clause but not out of a finite clause. This contrast receives a straightforward explanation if we assume that covert movement in Hindi is finite clause-bound. So the *wh*-phrase in (26a) is able to covertly move to the matrix [Spec,CP]. Due to the finite clause-boundedness of covert movement in Hindi, the *wh*-phrase in (26b) is only able to make it to the embedded [Spec,CP]. Consequently, the sentence has the embedded question reading but lacks the matrix question reading. In other words, the following configuration is never possible:

(27) $^{*}\text{XP}_i \ldots [_{CPfinite} \ldots t_{i,LF}]$

We have seen that a Correlative clause can be separated by a finite clause from the Dem with which it is associated (cf. 21). Therefore we can conclude that the relationship between the Correlative clause and the Demonstrative does not observe constraints obeyed by covert movement in Hindi.

We have also seen that it is not possible to establish a relationship between the Correlative clause and the Dem-XP across a strong island (cf. 22). Overt movement in Hindi obeys similar constraints:

(28)a′. overt movement out of a finite clause is okay
$\text{XP}_i \ldots [_{CPfinite} \ldots t_{XP,overt}]$

a. Lata_i, Sita ja:n-ti: hai [ki Poonam-ko t_i pasand
Lata Sita know-Hab.F be.Prs that Poonam-Dat like
hai]
be.Prs
Lata, Sita knows that Poonam likes.

b′. overt movement out of a Relative Clause Island is not okay
$^{*}\text{XP}_i \ldots [_{NP}\ \text{N}\ [_{RelCl} \ldots t_i \ldots]]$

b. *Arundhati-ne_i, mujh-ko [vo kaha:ni: $[_{RelCl}$ jo t_i likh-ii]]
Arundhati-Erg I-Dat that story.F Rel write-Pfv.F
pasand hai
like be.Prs
$^{*}\text{Arundhati}_i$, I like the story that t_i wrote.

Putting together our earlier conclusions, we can conclude that the relationship between the Correlative clause and the demonstrative is mediated by overt movement. Since the demonstrative phrase is not moving overtly, it

must be the Correlative clause that moves overtly and triggers the relevant island effects.

3.2. *Constituency and Constraints on Fronting of the Correlative Clause*

In the previous section, I have argued that clause-initial simple correlatives are derived by A'-movement of the Correlative clause from a position where they are base-generated adjoined to the demonstrative phrase. Now I provide independent evidence for the demonstrative phrase adjoined source for the Correlative clause.

3.2.1. *Evidence for the [CorrelativeCP Dem-XP] Structure from Co-ordination*

The first piece of evidence that the Correlative clause and its associated demonstrative phrase form a constituent comes from the fact that it is possible to co-ordinate two [CorrelativeCP Dem-XP] sequences (cf. 29).

(28) Rahul nowadays $[_{DP}[_{DP}\text{CorCP}_1$ Dem-$\text{XP}_1]$ and $[_{DP}\text{CorCP}_2$ Dem-$\text{XP}_2]]$ reading is

Rahul a:jkal $[_{DP}\,[_{DP}$ [jo kita:b Saira-ne likh-i:$]_1$ $\text{vo}_1]$ aur $[_{DP}$ [jo cartoon Shyam-ne bana:-ya:$]_2$ $\text{vo}_2]]$ paṛh raha: hai

Rahul nowadays Rel book.F Saira-Erg write-Pfv.F Dem and Rel cartoon Shyam-Erg make-Pfv Dem read Prog be.Prs

Nowadays, Rahul is reading the book that Saira wrote and the cartoon that Shyam made.

(Lit. 'Nowadays, Rahul is reading [[which book that Saira wrote] that (book)] and [[which cartoon that Shyam made] that (cartoon)].')

This suggests that the [CorrelativeCP Dem-XP] sequence forms a constituent. The coordinated '[CorrelativeCP Dem-XP] and [CorrelativeCP Dem-XP]' sequence can also be moved around as a unit, lending further support to our proposal that the [CorrelativeCP Dem-XP] sequence forms a constituent (cf. 30).

(30) Rahul $[_{DP}[_{DP}$CorCP$_1$ Dem-XP$_1$] and $[_{DP}$CorCP$_2$ Dem-XP$_2$]]$_j$ nowadays t_i reading is

Rahul $[_{DP}$ $[_{DP}$ [jo kita:b Saira-ne likh-i:]$_1$ vo$_1$]
Rahul *Rel book.F Saira-Erg write-Pfv.F Dem*
aur $[_{DP}$ [jo cartoon Shyam-ne bana:-ya:]$_2$ vo$_2$]]$_j$ a:jkal
and *Rel cartoon Shyam-Erg make-Pfv* *Dem* *nowadays*
t_j paṛh raha: hai
read Prog be.Prs

Nowadays, Rahul is reading the book that Saira wrote and the cartoon that Shyam made.

(Lit. 'Nowadays, Rahul is reading [[which book that Saira wrote] that (book)] and [[which cartoon that Shyam made] that (cartoon)].')

We know that, in general, it is not possible to extract subconstituents of a co-ordination. This is the well-known Coordinate Structure Constraint (cf. Ross 1967). Since I am proposing that the two [CorrelativeCP Dem-XP] sequences form a constituent, we predict that it should not be possible to extract subconstituents. In particular, fronting of any of the Correlative clauses out of the '[CorrelativeCP Dem-XP] and [CorrelativeCP Dem-XP]' configuration should lead to ungrammaticality. This expectation is borne out as is shown by the ungrammaticality of (31a, b).[13]

[13] I use the Coordinate Structure Constraint (CSC) to explain the ungrammaticality of (31). An anonymous reviewer points out this is potentially problematic given that it has been claimed in the literature that Hindi does not obey the CSC (cf. Gambhir 1981; Dwivedi 1995). It is not clear to me that the examples that Gambhir (1981) and Dwivedi (1995) use to justify this claim constitute real violations of the CSC. Consider (i).

(i) Mohan$_i$ hame lag-taa hai ki [t_i skuul ga-yaa
Mohan *me.Dat* *seem-Hab.MSg* *be.Prs* *that* *school* *go-Pfv.MSg*
thaa] aur [Miiraa baazaar ga-yii thii]
be.Pst.MSg and Mira market go-Pfv. be.Pst.F
Mohan, it seems to me had gone to school and Mira had gone to the market.

(i) under one of its interpretations, where *seems* does not take scope over the second conjunct, is not even a potential problem for the CSC. With stress on *Mira*, a second interpretation seems to become available where both clauses are interpreted as being in the scope of *seem*. The stress requirement is the same as that found in gapping, and I would treat the second interpretation of (i) as involving gapping of *it seems to me* and not a violation of the CSC. Of course it remains to be seen whether such a gapping-based approach will be able to handle all acceptable CSC violations in Hindi. It is enough for

(31) Extraction out of co-ordinate island

a′. ???CorCP$_1$ [Rahul is reading
[$_{DP}$[$_{DP}$ t_{CP_1} Dem-XP$_1$] and [$_{DP}$CorCP$_2$ Dem-XP$_2$]]]

a. ???[jo kita:b Saira-ne likh-i:]$_1$ [Rahul a:jkal
Rel book.F Saira-Erg write-Pfv.F Rahul nowadays
[$_{DP}$ [$_{DP}$ t_{CP_1} vo$_1$] aur [$_{DP}$ [jo cartoon Shyam-ne
Dem and Rel cartoon Shyam-Erg
bana:-ya:]$_2$ vo$_2$]] paṛh raha: hai]
make-Pfv Dem read Prog be.Prs
???[which book that Saira wrote]$_1$, nowadays, Rahul is reading [t_{CP_1} that (book)]$_1$ and [[which cartoon that Shyam made] that (cartoon)].

b′. *CorCP$_2$ [Rahul is reading
[$_{DP}$ [$_{DP}$CorCP$_1$ Dem-XP$_1$] and [$_{DP}$ t_{CP_2} Dem-XP$_2$]]]

b. *[jo cartoon Shyam-ne bana:-ya]$_2$ [Rahul a:jkal
Rel cartoon Shyam-Erg make-Pfv Rahul nowadays
[$_{DP}$ [$_{DP}$ [jo kita:b Saira-ne likh-i:]$_1$ vo$_1$]
Rel book.F Saira-Erg write-Pfv.F Dem
aur [$_{DP}$ t_{CP_2} vo$_2$]] paṛh raha: hai]
and Dem read Prog be.Prs
*[which cartoon that Shyam made]$_2$, nowadays, Rahul is reading [[which book that Saira wrote] that (book)] and [t_{CP_2} that (cartoon)].

3.2.2. *Constraints on Fronting of the Correlative Clause*

It is possible for more than one argument in a clause to have an associated Correlative clause.

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the explanation of the ungrammaticality of (31) that (31a, b) are not amenable to a similar gapping analysis and so can be ruled out by the CSC. It is interesting, though, that the putative CSC violations that have been reported for Hindi all involve extraction from the left conjunct. This is consonant with the judgments on (31a, b). Most speakers find a clear contrast between the marginal (31a) and the ungrammatical (31b).

(32) [$_{IP}$ ... [CorCP$_1$ Dem-XP$_1$] ... [CorCP$_2$ Dem-XP$_2$] ...]
Ram-ne [[jo laṛkaa tumhaare pi:chhe hai]$_1$ [us laṛke-ko]$_1$]
Ram-Erg Rel boy your behind is Dem boy-Dat
[[jo kita:b Shantiniketan-ne chhaapii thii]$_2$ [vo kitaab]$_2$] dii
Rel book Shantiniketan-Erg print-Pfv.F was.F Dem book give-Pfv.F
Ram gave the book that Shantiniketan had published to the boy who is standing behind you.
(Lit. 'Ram gave [[which book Shantiniketan had published] that book] to [[which boy is behind you] that boy]'.)

Moreover, any one of the two Correlative clauses can be fronted.

(33)a′. CorCP$_1$ [$_{IP}$ ... Dem-XP$_1$ ... [CorCP$_2$ Dem-XP$_2$] ...]

a. [jo laṛka: tumha:re pi:chhe hai]$_1$ Ram-ne [us laṛke-ko]$_1$
Rel boy-Dat your behind be.Prs Ram-Erg Dem boy-Dat
[[jo kita:b Shantiniketan-ne chha:pi: thi:]$_2$ [vo kitaab]$_2$] dii
Rel book Shantiniketan-Erg publish-Pfv.F be.Pst.F Dem book ive-Pfv.F
Ram gave the book that Shantiniketan had published to the boy who is standing behind you.
(Lit. [which boy is behind you]$_1$, Ram gave [that boy]$_1$ [[which book Shantiniketan had published] that book])

b′. CorCP$_2$ [$_{IP}$ ... [CorCP$_1$ Dem-XP$_1$] ... [Dem-XP$_2$] ...]

b. [jo kita:b Shantiniketan-ne chha:pi: thi:]$_2$ Ram-ne
Rel book Shantiniketan-Erg publish-Pfv.F be.Pst.F Ram-Erg
[[jo laṛkaa tumhaare pi:chhe hai]$_1$ [us laṛke-ko]$_1$] [vo
Rel boy your behind is Dem boy-Dat Dem
kitaab]$_2$ dii
book give-Pfv.F
Ram gave the book that Shantiniketan had published to the boy who is standing behind you.
(Lit. '[which book Shantiniketan had published], Ram gave that book to [[which boy is behind you] that boy].')

However, it is not possible to have two fronted Correlative clauses:

(34)a′. *CorCP$_1$ CorCP$_2$ [$_{IP}$ ... Dem-XP$_1$ ... Dem-XP$_2$ ...]

a. *[jo laṛka: tumha:re pi:chhe hai]$_1$ [jo kita:b
Rel boy-Dat your behind be.Prs Rel book
Shantiniketan-ne chha:pi: thi:]$_2$ Ram-ne [us
Shantiniketan-Erg publish-Pfv.F be.Pst.F Ram-Erg Dem
laṛke-ko]$_1$ [vo kitaab]$_2$ dii
boy-Dat Dem book give-Pfv.F
intended interpretation is same as (32)

b′. *CorCP$_2$ CorCP$_1$ [$_{IP}$ ... Dem-XP$_1$ ... Dem-XP$_2$ ...]

b. *[jo kita:b Shantiniketan-ne chha:pi: thi:]$_2$ [jo
Rel book Shantiniketan-Erg publish-Pfv.F be.Pst.F Rel
laṛka: tumha:re pi:chhe hai]$_1$ Ram-ne [us laṛke-ko]$_1$
boy-Dat your behind be.Prs Ram-Erg Dem boy-Dat
[vo kitaab]$_2$ dii
Dem book give-Pfv.F
intended interpretation is same as (33)

The ordering between the two fronted Correlative clauses does not matter. If more than one Correlative clause appears discontinuous from its associated demonstrative phrase, the resulting structure is ungrammatical.

Under Option 1, where the Correlative clauses are related to their associated demonstrative phrase by variable binding, there is no straight-

forward explanation for why it is not possible to have more than one fronted Correlative clause associated with one matrix clause.

On the approach sketched here (i.e., the Correlative clause moves), this fact about Correlatives receives a natural explanation. This explanation has two parts. First, we note that the Correlative clause is an adjunct – it is base-generated in an A' position that is adjoined to the Dem-XP. Second, while it is possible to extract two arguments out of a finite clause in Hindi, it is not possible to extract two adjuncts out of a finite clause. (35) shows that two arguments can be simultaneously extracted from a finite clause.

(35) Extraction of two arguments out of a clause is okay

a′. 'topicalization': $\text{XP}_{i,arg}$ $\text{YP}_{j,arg}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots t_j \ldots]]$

a. Ram-ne$_i$ Sita-ko$_j$, Radha soch-ti: hai, ki kai
Ram-Erg Sita-Dat Radha think-Hab.F be.Prs that many
tohfe di-ye the
presents give-Pfv.Pl be.Pst.MPl
Radha thinks that Ram gave Sita many presents.

b′. '*wh*-movement': Wh-$\text{XP}_{i,arg}$ Wh-$\text{YP}_{j,arg}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots t_j \ldots]]$

b. kis-ne$_i$ kis-ko$_j$, Radha soch-ti: hai, ki t_i t_j kai
who-Erg who-Dat Radha think-Hab.F be.Prs that many
tohfe di-ye the
presents give-Pfv.Pl be.Pst.MPl
For which x, y, Radha thinks that x gave y many presents.

(36) demonstrates that a single adjunct can be extracted out of a finite clause.

(36) extraction of one adjunct out of a clause is okay

a′. *kahã:*/'where': $\text{XP}_{i,adj}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots]]$

a. kahã:$_i$, Radha soch-ti: hai, ki Ram-ne Sita-ko
where Radha think-Hab.F be.Prs that Ram-Erg Sita-Dat
tohfe t_i di-ye the?
presents give-Pfv.Pl be.Pst.MPl
Where$_i$ does Radha think [that Ram gave presents to Sita t_i]?

b′. *kab*'/'when': $XP_{i,adj}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots]]$

b. kab_i, Radha soch-ti: hai, ki Ram-ne Sita-ko
when Radha think-Hab.F be.Prs that Ram-Erg Sita-Dat
tohfe t_i di-ye the?
presents give-Pfv.Pl be.Pst.MPl
When$_i$ does Radha think [that Ram gave presents to Sita t_i]?

However, extraction of two adjuncts out of a clause is bad, as demonstrated by the ungrammaticality of (37).

(37)a′. 'where when': $XP_{i,adj}$ $YP_{j,adj}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots t_j \ldots]]$

a. *kahã:$_i$ kab$_j$, Radha soch-ti: hai, ki Ram-ne Sita-ko
where when Radha think-Hab.F be.Prs that Ram-Erg Sita-Dat
tohfe t_i t_j di-ye the?
presents give-Pfv.Pl be.Pst.MPl
*For which x, y, Radha thinks [that Ram gave presents to Sita at place x, time y]?

b′. 'when where': $YP_{j,adj}$ $XP_{i,adj}$ $[_{CP} \ldots [_{CP} \ldots t_i \ldots t_j \ldots]]$
*kab$_j$ kahã:$_i$, Radha soch-ti: hai, ki Ram-ne Sita-ko
when where Radha think-Hab.F be.Prs that Ram-Erg Sita-Dat
tohfe t_i t_j di-ye the?
presents give-Pfv.Pl be.Pst.MPl
*For which x, y, Radha thinks [that Ram gave presents to Sita at place x, time y]?

Having taken this excursus into the properties of adjunction extraction in Hindi, let us re-examine the structure of a correlative construction with two fronted Correlative clauses.

(38) *Cor-CP_1 Cor-CP_2 [... $[t_{1,adjunct}$ Dem-$XP_1]$ ... $[t_{2,adjunct}$ Dem-$XP_2]$ ...]

The schema in (38) shows that structures where more than one Correlative Clause appears discontinuous from its associated demonstrative phrase involve the extraction of more than one adjunct. We know that a constraint against multiple adjunct extraction is needed independently to account for

the ungrammaticality of (37).[14] Given such a constraint, it follows that structures that involve fronting of more than one Correlative Clause are unacceptable.

3.3. *Reconstruction Effects*

So far we have seen arguments that provide evidence for the movement of the Correlative clause. These arguments had the following flavor: there are certain phenomena that receive a natural explanation if we assume that the Correlative clause is base-generated adjoined to its associated demonstrative phrase and moves to its surface position (Option 2). These phenomena remain unexplained if we assume that the Correlative clause is base-generated adjoined to IP and that the link between the Correlative clause and its associated demonstrative phrase is established merely by variable binding (Option 1). In this section, we will discuss another phenomenon whose existence is easily explained under Option 2 but whose mere existence is problematic for Option 1. The phenomenon in question is that Correlative clauses display certain reconstruction effects.

[14] An anonymous reviewer points out that the adjunction extraction example in (37) is not completely parallel to (32), which involves the fronting of two correlative clauses. The first difference the reviewer points out is that (37) involves fronted adjunct *wh*-phrases while fronted correlative clauses are not *wh*-phrases. However, it turns out that adjunct non-*wh*-phrases are subject to the same extraction constraints as adjunct *wh*-phrases (cf. (i)). Note that the counterparts of (i) with only one adjunct extracted are grammatical.

(i) *kal$_i$ Dilli-me$_j$ Radha soch-ti: hai, ki Ram-ne Sita-ko
yesterday Delhi-in Radha think-Hab.F be.Prs that Ram-Erg Sita-Dat
tohfe t_i t_j di-ye
presents give-Pfv.Pl
*Yesterday in Delhi, Radha thinks than Ram gave Sita presents.

The second difference the reviewer notes is that the ban on multiple adjunct extractions applies only if two adjuncts cross a finite-CP boundary. This is not obviously the case with the correlative examples in (32). The problem in constructing a true minimal pair is that (i) *wh*-movement in Hindi is overt only if the *wh*-phrase moves out of a finite clause. Otherwise the movement is covert (cf. Mahajan 1990, ch. 3), and (ii) unless a finite clause boundary intervenes between the adjunct *wh*-phrases and the clause they are associated with, we cannot be certain that the adjunct *wh*-phrases have been extracted. The relatively free word order of Hindi affords multiple sites for adjunct attachment and makes it difficult to draw reliable conclusions about clause-internal displacement of adjuncts. This is not the case with correlative clauses where the surface position of the associated Dem-XPs explicitly marks the displacement. Because of these two reasons, it is necessary to insert a finite-clause boundary in (37) to demonstrate the impossibility of multiple adjunct extraction.

Before we go on to a more detailed discussion of the reconstruction effects that Correlative clauses display, it should be noted that reconstruction effects do not follow from a Movement account. In other words, movement does not entail reconstruction. There may be several reasons for which a moved phrase may not reconstruct. However, the existence of reconstruction effects indicates movement.[15] The existence of reconstruction effects associated with Correlative clauses is not (straightforwardly) compatible with an account where the Correlative clause is not moving.

3.3.1. *Condition C Effects*

Correlative clauses display the following restriction on coreference between a matrix pronoun and a name contained in the correlative clause: if a pronoun c-commands the demonstrative phrase associated with a Correlative clause, then the pronoun cannot corefer with a name contained inside that Correlative clause.[16,17]

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[15] Several anonymous reviewers have pointed out to me that given the existence of semantic accounts of reconstruction/connectivity effects, the 'reconstruction indicates movement' claim needs to be qualified. I agree with their assessment in the general case. However, the Condition C reconstruction effects found with Correlatives support a syntactic and, in particular, a movement-based account (cf. Romero 1997; Fox 1999, 2000 for a similar argument).

[16] There is considerable speaker variation here – most speakers find a contrast between (39a) and (39b) and between (39c) and (39d) but for some this constitutes only a preference and not a grammaticality contrast. I find the contrast to be weaker if the demonstrative is replaced by a more complex phrase containing the demonstrative. Similar qualifications hold for (43) (cf. Dayal 1996, pp. 163–164).

[17] A potential counter-argument against treating the oddness of (39b, d) as a Condition C violation could be that in a Correlative, the Correlative Proform has to be in a clause-initial position. Evidence against such a claim: (a) the grammaticality of (ia) shows that the Correlative Proform does not have to be in the sentence-initial position. This is exemplified in (39a–d). If, as in (39a,c), the pronoun does not c-command the demonstrative phrase associated with the Correlative clause, the pronoun can corefer with a name contained in the Correlative clause (*Sita*). If, however, the pronoun c-commands the demonstrative phrase associated with a Correlative Clause as in (39b,d), it cannot refer to a name contained inside the relevant Correlative clause.

(i)a′ $[_{CorCP} \ldots \text{Name}_j \ldots]_i$ [Name_k [t_i Dem-XP_i] . . .]

a. jo laṛkii Sita-ko pyaar kar-tii hai]$_i$ [Radha-ne us-ko$_i$ ṭhukraa di-yaa]
Rel girl Sita-Acc love do-Hab.F is Radha-Erg Dem-Acc reject GIVE-Pfv
Radha rejected the girl who loves Sita.

(39)a′. $[_{CorCP} \ldots \text{Name}_j \ldots]_i$ [[t_i Dem-XP$_i$] Pron$_j$ . . .]

a. [jo laṛkii Sita-ko$_j$ pyaar kar-tii hai]$_i$ [us-ne$_i$ us-ko$_j$ ṭhukraa di-yaa]
Rel girl Sita-Acc love do-Hab.F is Dem-Erg Dem-Acc reject GIVE-Pfv
The girl who loves Sita rejected her.

b′. *$[_{CorCP} \ldots \text{Name}_j \ldots]_i$ [Pron$_j$ [t_i Dem-XP$_i$] . . .]

b. [jo laṛkii Sita-ko$_j$ pyaar kar-tii hai]$_i$ [us-ne$_{k/*j}$ us-ko$_i$ ṭhukraa di-yaa]
Rel girl Sita-Acc love do-Hab.F is Dem-Erg Dem-Acc reject GIVE-Pfv
She rejected the girl who loves Sita.

c′. $[_{CorCP} \ldots \text{Name}_j \ldots]_i$ [[t_i Dem-XP$_i$] Pron$_j$ . . .]

c. [jo laṛkii Sita-ko$_j$ pyaar kar-tii hai]$_i$ [us-ko$_i$ us-ne$_{j/k}$ ṭhukraa di-yaa
Rel girl Sita-Acc love do-Hab.F is Dem-Acc Dem-Erg reject GIVE-Pfv
She rejected the girl who loves Sita.

d′. *$[_{CorCP} \ldots \text{Name}_j \ldots]_i$ [Pron$_j$ [t_i Dem-XP$_i$] . . .]

d. [jo laṛkii Sita-ko$_j$ pyaar kar-tii hai]$_i$ [us-ko$_{k/*j}$ us-ne$_i$ ṭhukraa di-yaa]
Rel girl Sita-Acc love do-Hab.F is Dem-Acc Dem-Erg reject GIVE-Pfv
The girl who loves Sita rejected her.

The constraints on coreference that we see in (c39) can be explained as a Condition C effect under the movement account. We have to assume that at LF a copy of the Correlative clause is interpreted in its base position. Now a pronoun that c-commands the demonstrative phrase associated with the Correlative clause also c-commands the entire Correlative clause at LF. If this Correlative clause contains a name and the relevant pronoun is

(b) Even when there is more than one demonstrative in the matrix clause, as long as the first demonstrative is not bound with anything in the matrix clause, the sentence is fine (cf. 39b, d).

coindexed with the name, we have a Condition C violation (cf. 39b, d). A Condition C violation is only triggered if the pronoun c-commands the demonstrative associated with the Correlative clause, hence the absence of such a violation in (39a, c).[18]

While the existence of Condition C effects does not follow from the movement account (we have to assume that the lowest copy is interpreted), their existence is not particularly surprising. Under the non-movement approach, it is not obvious how to account for the (non-)coreference facts.

3.3.2. *Variable Binding*

We know that reconstruction is able to create new variable binding possibilities. In general, a quantifier can only bind a pronoun that it overtly c-commands.

(40)a. *His$_i$ mother loves every boy$_i$.

b. Every boy$_i$ loves his$_i$ mother.

The unacceptability of (40a) is an instance of the Weak Crossover constraint. Note now that variable binding is acceptable in (41) even though the quantifier does not overtly c-command the pronoun it binds. ((41b, c) are from Fox 2000, p. 147.)

(41)a. [His$_i$ band]$_j$ seems to every Austinite$_i$ [t_j to be the best].

b. [Someone from his$_i$ class]$_j$ seems to every professor$_i$ [t_j to be a genius].

c. [His$_i$ father]$_j$ seems to every boy$_i$ [t_j to be a genius].

This apparent exception to the requirement that quantifiers c-command the pronouns they bind disappears once we assume that the subject NP is interpreted in its trace position at LF and is there c-commanded by the quantifier that binds it at LF (cf. Barss 1986; Fox 2000, p. 147).

[18] Note that in (39c, d) the pronoun *us-ko* has scrambled to the left of the subject *us-ne*. An anonymous reviewer points out that the account of the contrast between (39c vs. d) rests on the additional assumption that the pronoun *us-ko* does not undergo obligatory reconstruction. I think that this additional assumption is supported by the literature on Scrambling. The scrambling of *us-ko* is short-distance (clause internal) scrambling and from Mahajan (1990), we know that this kind of scrambling is not subject to obligatory reconstruction.

(42)a. LF: seems to every Austinite$_i$ [his$_i$ band to be the best]

b. LF: seems to every professor$_i$ [[someone from his$_i$ class] to be a genius].

c. LF: seems to every boy$_i$ [[his$_i$ father] to be a genius].

We find a similar pattern with Hindi correlatives: a quantifier that c-commands the Demonstrative associated with a fronted Correlative Clause can bind a pronoun in the Correlative Clause. Despite the quantifier not c-commanding the pronoun it binds, (43) is not ungrammatical.

(43)a′. [$_{CorCP}$ ... Pron$_i$ ...]$_j$ [QP$_i$ [t_j Dem-XP$_j$] ...]

a. [jis laṛke-ko vo$_i$ pasand kar-ti: hai]$_j$ [har laṛki:$_i$ [t_j [us
Rel boy-Dat Dem like do-Hab.F be.Prs every girl Dem
laṛke-ko]$_j$] buddhima:n samajh-ti: hai]
boy-Dat intelligent consider-Hab.F be.Prs
Every girl considers the boy who she likes to be intelligent.

Given our proposal that the Correlative clause is base-generated with its associated demonstrative phrase, and the assumption we made in the previous section that the Correlative clause is interpreted low, the absence of Weak Crossover effects in (43) is predicted. At LF, the correlative clause is interpreted low in a position where the quantifier c-commands it. Therefore the pronoun bound by the quantifier is indeed in the c-command domain of the quantifier at LF.[19]

[19] An anonymous reviewer raises the following question about (43) and (48): Given that the movement of the Correlative clause involves A'-movement, why does the movement of the Correlative clause, which contains a bound variable pronoun, across the QP not induce a WCO violation? My response to this question involves noting that A'-movement of a phrase containing a bound pronoun over the QP that binds the pronoun does not lead to a WCO violation as long as it is possible to reconstruct the phrase so that the bound pronoun is in the scope of its binder at LF (cf. i).

(i)a. [Which reviews of his$_i$ book]$_j$ does every poet$_i$ try to forget t_j?

b. [Which book on his$_i$ shelf]$_j$ is every poet$_i$ particularly proud of t_j?
(from Lebeaux 1998 via Safir 1999)

3.3.3. *Prediction: Non-Reconstruction Effects with Multi-Head Correlatives*

Reconstruction effects with Simple Correlatives are a possibility because Simple Correlatives involve movement. Our proposal assigns different structures to Simple and Multi-Head Correlatives. The derivation of Simple Correlatives involves movement while the derivation of Multi-Head Correlatives does not. Multi-Head Correlatives do not get to their surface position via movement from a Dem-XP adjoined position: there is only one Correlative Clause that binds two positions so there is no obvious Dem-XP-internal location for the Multi-Head Correlative to be base-generated.

Since the derivation of Multi-Head Correlatives does not involve movement, reconstruction into the matrix clause is not an option. We predict an absence of Reconstruction effects and that is what we find. There do not seem to be any restrictions on coreference between a pronoun in the matrix clause and a name contained in a Multi-Head Correlative adjoined to the clause.

(44)a′. $[_{MultCorCP}$ Rel_i Name_j Rel_k ...] [Pron_j Dem-XP_k Dem-XP_i ...]

a. [jis-ne_i Ram-ko_j jise_k di-yaa] [us-ne_j us-se_k us_i-kii taariif kii]
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, Ram praised x to y.

b′. $[_{MultCorCP}$ Rel_i Name_j Rel_k ...] [Pron_j Dem-XP_i Dem-XP_k ...]

b. [jis-ne_i Ram-ko_j jise_k di-yaa] [us-ne_j us-se_i us_k-kii taariif kii]
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, Ram praised y to x.

c′. $[_{MultCorCP}$ Rel_i Name_j Rel_k ...] [Dem-XP_k Pron_j Dem-XP_i ...]

c. [jis-ne$_i$ Ram-ko$_j$ jise$_k$ di-yaa] [us-ne$_k$ us-se$_j$
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst
us$_i$-kii taariif kii]
Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, y praised Ram to x.

d′. [$_{MultCorCP}$ Rel$_i$ Name$_j$ Rel$_k$ ...] [Dem-XP$_i$ Pron$_j$ Dem-XP$_k$ ...]

d. [jis-ne$_i$ Ram-ko$_j$ jise$_k$ di-yaa] [us-ne$_i$ us-se$_j$
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst
us$_k$-kii taariif kii]
Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, x praised y to Ram.

e′. [$_{MultCorCP}$ Rel$_i$ Name$_j$ Rel$_k$ ...] [Dem-XP$_k$ Dem-XP$_i$ Pron$_j$ ...]

e. [jis-ne$_i$ Ram-ko$_j$ jise$_k$ di-yaa] [us-ne$_k$ us-se$_i$
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst
us$_j$-kii taariif kii]
Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, y praised Ram to x.

f′. [$_{MultCorCP}$ Rel$_i$ Name$_j$ Rel$_k$ ...] [Dem-XP$_i$ Dem-XP$_k$ Pron$_j$ ...]

f. [jis-ne$_i$ Ram-ko$_j$ jise$_k$ di-yaa] [us-ne$_i$ us-se$_k$
Rel-Erg Ram-Acc Rel.Dat give-Pfv Dem-Erg Dem-Inst
us$_j$-kii taariif kii]
Dem-Gen.F praise did
For x, y s.t. x gave Ram to y, x praised Ram to y.

Further, a quantifier in the matrix clause is unable to bind a pronoun contained in a Multi-Head Correlative clause adjoined to the matrix clause.

(45) *[$_{MultCorCP}$ Pron$_i$ Rel$_j$ Rel$_k$ . . .] [QP$_i$ Dem-XP$_j$ Dem-XP$_k$ . . .]
*[us-ne$_i$ jis laṛke-ko$_j$ jo kita:b$_k$ di-i] [har laṛki:-ne$_i$
Dem-Erg Rel boy-Dat Rel book.F give-Pfv.F every girl-Erg
us laṛke-se$_j$ us kita:b$_k$ ke-ba:re-me ba:t ki-i
Dem boy-with Dem book about talk do-Pfv.F
*For book x, boy y s.t she$_i$ gave x to y, every girl$_i$ talked to y about x.

We have seen that Multi-Head Correlatives contrast with Simple Correlatives with respect to reconstruction effects. Simple Correlatives display reconstruction effects while Multi-Head Correlatives do not. This fits with our proposal that simple and Multi-Head Correlatives differ in their derivations. The derivation of Simple Correlatives involves movement and so reconstruction effects can appear. The derivation of Multi-Head Correlatives does not involve movement and so reconstruction effects cannot appear.

3.3.4. *Reconstruction Effects with Multi-Head Correlatives*
In the previous section, it was pointed out that in certain environments where Simple Correlatives display reconstruction effects, Multi-Head Correlatives do not. Further investigation, however, reveals that there exist configurations in which Multi-Head Correlatives do display reconstruction effects. In these configurations, Multi-Head Correlatives also display certain locality effects. These configurations are schematized in (46). The reconstruction and locality effects show that out of the two possible parses which are in principle possible for (46) (= (46a, b)), only the Option 2 parse (=(46b)) is actually available.

(46) [$_{MultCorCP}$ Rel$_i$ Rel$_j$ . . .][Bill thinks that [$_{IP}$ . . . Dem-XP$_i$ Dem-XP$_j$ . . .]]

a. Option 1: base-generation
[$_{MultCorCP}$ Rel$_i$ Rel$_j$ . . .][Bill thinks that [$_{IP}$ . . . Dem-XP$_i$ Dem-XP$_j$ . . .]]

b. Option 2: Multi-Head Correlative Clause moves up
[$_{MultCorCP}$ Rel$_i$ Rel$_j$ . . .]$_k$ [Bill thinks that [t_k [$_{IP}$ . . . Dem-XP$_i$ Dem-XP$_j$ . . .]]]

There are two ways in which (46) can be derived: (46a) and (46b). (46a) involves adjunction of the Multi-Head Correlative clause to the matrix IP. It is the analogue of Option 1 for the derivation of Simple Correlatives. (46b)

involves adjunction of the Multi-Head Correlative clause to the embedded IP followed by A'-movement to its surface position. (46b) is the analogue of Option 2 for the derivation of Simple Correlatives.

Multi-Head Correlative clauses in configurations like (46) display reconstruction effects. By the reasoning in the previous sections, this is evidence for the movement of the correlative clause and by association evidence for (46b). (47) shows that a pronoun in the matrix clause cannot be coreferent with a name in a Multi-Head Correlative if the Multi-Head Correlative clause is associated with demonstrative phrases contained in an embedded clause.[20]

(47) *$[_{MultCorCP}$ Rel_i Name_j Rel_k ... $]_l$ [Pron_j thinks that [t_l [Dem-XP_i Dem-XP_k ...]]]

[jis laṛke-ne Sita-se$_i$ jis topic ke-baare-me baat ki-i]$_l$ [vo$_{j/*i}$
Rel boy-Erg Sita-with Rel topic about talk did Dem
soch-tii hai ki [t_l [vo laṛkaa us topic par paper
think-Hab.F is that Dem boy Dem.Obl topic on paper
likh-egaa]]]
write-Fut

For x, y s.t. x talked to Sita$_i$ about topic y, she$_{j/*i}$ thinks that x will write a paper on topic y.

Given the movement structure, if we assume the Multi-Head Correlative is interpreted in its base position, the disjoint reference effect is reduced to a Condition C violation. The disjoint reference effect remains unexplained under the structure in (46a).

We also find that in the configuration in (46) a quantifier in the matrix clause is able to bind a pronoun contained in the Multi-Head Correlative clause even though the quantifier does not c-command the pronoun.

[20] As in the case of (39), there is considerable speaker variation here. Some speakers do not find any disjoint reference effect in (47). A disjoint reference effect, however, becomes visible for these speakers when reconstruction of the Correlative clause is forced by variable binding considerations (cf. 48). This suggests that reconstruction of the Correlative clause is possible but not obligatory for these speakers.

(48) $[_{MultCorCP}$ Pron$_i$ Rel$_j$ Rel$_k$ ...$]_l$ [QP$_i$ ... V [t_l [$_{CP}$ Dem-XP$_j$ Dem-XP$_k$ ...]]]

[us-ne$_i$ jis laṛke-ko$_j$ jo kita:b$_k$ di-i]$_l$ [har laṛki
Dem-Erg Rel boy-Dat Rel book.F give-Pfv.F every girl
soch-ti: hai [ki t_l [us laṛke-ko vo kita:b pasand
think-Hab.F be.Prs that Dem boy-Dat Dem book.F like
a:-yegi:]]]
'come'-Fut.F

Every girl$_i$ thinks that for book x, boy y s.t she$_i$ gave x to y, y will like x.

Given the movement option and low interpretation of the Correlative clause, the absence of a Weak Crossover violation receives a natural explanation. At LF, the Correlative clause (and hence the pronoun) it contains is in the c-command domain of the quantifier. The acceptability of (48) remains a puzzle under the structure in (46a).

In addition to reconstruction effects, Multi-Head Correlative clauses display certain locality effects. A Multi-Head Correlative construction is grammatical only if all the demonstratives that are associated with the Multi-Head Correlative clause are located in one and the same finite clause. Thus, the following configuration is ungrammatical.

(49) *$[_{MultCorCP}$ Rel$_i$ Rel$_j$ ...] [... Dem-XP$_i$ ... V [$_{CP}$ ... Dem-XP$_j$ ...]]

*[jis-ne$_i$ jis-ko$_j$ dekh-aa] [us-ne$_i$ kah-aa [$_{CP}$ ki vo$_j$
Rel Rel-Acc see-Pfv Dem-Erg say-Pfv that Dem
aa-yega:]]
come-Fut

*For which x, y s.t. x saw y, x said that y will come (Wali 1982 via Dayal 1996).

The ungrammaticality of (49) does not follow immediately from the analysis so far. But it follows from the ungrammaticality of (49) that the structure in (46a) cannot be the correct one for Multi-Head Correlatives. If it were, we would expect (49) to be grammatical. This is because in (46a) the relation between the Multi-Head Correlative clause and the demonstratives associated with it is established purely through variable binding. We do not expect variable binding to display the kind of locality effects we see in (49).

I take the ungrammaticality of (49) to reveal that even the relationship between a Multi-Head Correlative and its associated demonstratives in, for example, (50) cannot be a matter of straightforward variable binding.

(50) (= (1b))
$[_{CorCP} \ldots \text{Rel-XP}_i \ldots \text{Rel-YP}_j \ldots]_{i,j}$ $[_{IP} \ldots \text{Dem-XP}_i \ldots \text{Dem-YP}_j \ldots]$
[jis-ne$_i$ jo$_j$ kar-na: cha:h-a:]$_{i,j}$ [*us-ne$_i$* *vo$_j$* ki-ya:]
Rel-Erg Rel do-Ger want-Pfv *Dem-Erg Dem do-Pfv*
For x, y s.t. x wanted to do y, x did y.
(Lit. 'Who wanted to do what, he/she did that.')

Instead, the Multi-Head Correlative clause can only be Merged, more specifically adjoined, to an IP which can at LF be interpreted as a suitable predicate. 'Suitability' simply means that if the Multi-Head Correlative clause contains n Rel-XPs, then the IP should be an n-ary predicate. I assume that at LF, (50) has the schematic form in (51) and that the LF movement of Dem-XPs creates predicates (cf. Srivastav 1991's semantics for Correlatives and Heim and Kratzer 1997's treatment of Relative Pronouns).

(51) $[_{CorCP} \ldots \text{Rel-XP}_i \ldots \text{Rel-YP}_j \ldots]_{i,j}$ Dem-XP$_i$ Dem-XP$_j$ $[_{IP} \ldots t_i \ldots t_j \ldots]$

The reader might wonder about the propriety of assuming Dem-XP movement here given that it had been abandoned in an earlier section. But what had been abandoned in that section was covert movement of a Dem-XP out of a finite CP. Nothing was said there that ruled out the possibility of covert movement of a Dem-XP within a finite clause. As it turned out, the reconstruction facts showed that the strategy of covert Dem-XP movement that we are using with Multi-Head Correlatives was unavailable with Simple Correlatives. But the unavailability of this strategy with Simple Correlatives does not mean that this strategy is unavailable with Multi-Head Correlatives.

Now let us see how we can derive the ungrammaticality of (49). The Multi-Head Correlative needs to be Merged to an IP which at LF is a predicate of the right kind (i.e., is a 2-ary predicate). There is no IP of this sort in (49) and this is why (49) is ungrammatical. The embedded IP in (49) is not a suitable Merger site because it only contains one Dem-XP and so it only counts as a 1-ary predicate at LF. The matrix IP does contain two Dem-XPs – one immediately in the matrix IP and the other in

the embedded IP. However, it does not count as a predicate at LF either. To create a 2-ary predicate, we would need to move both Dem-XPs to the edge of the matrix IP at LF as in the schematic (52).

(52) *Dem-XP$_I$ **Dem-XP**$_j$ [$_{IP}$ ... t_i ... V that [$_{IP}$ ... **t**$_j$ ...]]

But as discussed earlier, covert movement in Hindi is finite-clause-bound. Consequently the movement of Dem-XP$_j$ (in boldface) in (52) is illegitimate.[21]

Under an account like (46bb), where the Correlative clause starts off adjoined to the lower IP and is then fronted, the reconstruction and locality facts discussed above find natural explanations. Additionally, there turns out to be an interesting parallel between simple and Multi-Head Correlatives: the grammar picks the option where they are merged as locally as possible. We will develop this point in section 5.

4. Rel-XP Deletion and Asymmetries between Simple and Multi-Head Correlatives

The phenomenon of Rel-XP deletion (or omission) reveals another asymmetry between simple and Multi-Head Correlatives. This asymmetry is not unexpected under our proposal that simple and Multi-Head Correlatives involve distinct structures. The Correlative constructions that we have discussed so far have all involved a Correlative clause which contains a Rel-XP and a matrix clause with a Dem-XP. In many Indo-Aryan languages (e.g., Hindi, Punjabi), the Rel-XP inside the Correlative clause cannot be omitted.

(53) [*(jo) sale para hai] [Lila vo CD khariid-egii]
Rel sale on be.Prs Lila.F Dem CD buy-Fut.F
Lila will buy the CD which is on sale.

In some Indo-Aryan languages (Dakkhini, cf. Kachru 1973; Schmidt 1981; Gujarati, cf. Cardona 1965; Lambert 1971; Marathi, cf. Junghare 1973; Kelkar 1973; Wali 1982; Pandharipande 1997), it is, however, possible for the Correlative clause to lack a Rel-XP.

[21] A derivation where the Multi-Head Correlative clause is Merged with the embedded IP binds the Dem-XP in the embedded IP at the point of Merge, and the Dem-XP in the matrix IP after fronting can also be ruled out. The fronting of the Correlative Clause involves A'-scrambling and it is not possible to bind variables from an A'-position (cf. Mahajan 1990, ch. 1).

(54) Rel-XP deletion/omission in simple Gujarati Correlatives (Babu Suthar, p.c.)

a′. $[_{CorCP}$ Rel-XP$_i$ . . . $]_i$ [YP Dem-XP$_i$ . . .]

a. [je chokro sita vat kari rahyo che], [ritane te chokro
Rel boy Sita talk de Prog is Rita-Dat Dem boy
game che]
like is
Rita likes the boy who is talking to Sita.
(Lit. 'Which boy is talking to Sita, Rita likes that boy.'

b′. $[_{CorCP}$ ϕ_{RelXP} . . . $]_i$ [YP Dem-XP$_i$ . . .]
[sita sathe vat kari rahyo che], [ritane te chokro game
Sita with talk do Prog is Rita-Dat Dem boy che
che]
is
Rita likes the boy who is talking to Sita.
(Lit. '(Who) is talking to Sita, Rita likes that boy.')

However, deletion/omission of Rel-XPs is never possible in a Multi-Head Correlative.

(55) No Rel-XP deletion in Multi-Head Gujarati Correlatives (Babu Suthar, p.c.)
$[_{CorCP}$ *(Rel-XP$_i$) *(Rel-YP$_j$) . . . $]_{i,j}$ [Dem-XP$_i$ Dem-YP$_j$ . . .]
[je chokrae$_i$ je chokrine$_j$ joi]$_{i,j}$ [te chokrae$_i$ te
Rel *boy-Erg Rel girl-Acc saw Dem boy-Erg Dem*
chokrine$_j$ pasand kari]
girl-Acc like did
For x, y s.t. x saw y, x liked y.

The above asymmetry between Simple and Multi-Head Correlatives with respect to Rel-XP deletion can be explained naturally in the current analysis. Let us assume that the cases where there is no overt Rel-XP in the Correlative involve a null relative operator.[21] I propose that the null relative operator (or alternatively deletion of the Rel-XP) within the Correlative clause is sanctioned only if the Correlative clause starts off within the

[21] We can also assume that Rel-XP deletion has taken place. Nothing seems to depend upon the choice between these options.

Dem-XP. The null relative operator/Rel-XP deletion needs to be licensed *locally*. We see this point in English Relative clauses also, where a null operator is licensed only in a [Spec,head] relationship with a relative C^0.

(56)a. the book [which/ϕ_i C^0[+rel] [John read t_i]]
b. a topic [[on which]/*[on ϕ]$_i$ [John writes t_i]]

The null operator is licensed when it is itself in the specifier of the C^0[+rel] in (56a), but not when it is contained in another phrase which is in the specifier of the C^0[+rel]. Similarly, the null operator does not seem to be licensed in cases of stacked relative clauses (cf. 57).

(57) (from Jacobson 1983)
a. every man who I like who I know
b. *every man who I like ϕ I know

The locality conditions on licensing of null operators vary across languages. In the Indo-Aryan languages that allow null operators, the licensing condition requires that the Correlative clause be generated adjoined to the demonstrative phrase it is associated with. The licensing structure is available for Simple Correlatives, and hence we find that null operators are permitted in Simple Correlatives in these languages. Multi-Head Correlatives do not/cannot start off inside a demonstrative phrase. Hence, the absence of Rel-XP deletion in Multi-Head Correlatives makes sense. Under an analysis that assigned identical structures to Simple and Multi-Head Correlatives, we would have to find some other way to capture this difference in Rel-XP deletion.

One question raised by the discussion in this section concerns the distribution of 'Rel-XP deletion' in Correlatives in the Indo-Aryan languages. Why is 'Rel-XP deletion' in Correlatives only an option in Dakkhini, Gujarati, and Marathi? To properly address this question is beyond the scope of this paper. A promising line of investigation is, however, suggested by the fact that of the Indo-Aryan languages with Correlatives, Dakkhini, Gujarati, and Marathi are the only languages that allow non-subject extractions in prenominal Non-finite Relative clauses (cf. section 2.2). Further sense of the distribution of null operators amongst the Indo-Aryan languages can be made by noting the geographical distribution of Dakkhini, Gujarati, and Marathi. These languages have been in close contact with the Dravidian languages, which only have null relative operators (no overt relative pronouns or phrases, except in correlatives). It is therefore plausible that the existence of null operators/'Rel-XP deletion' in Correlatives is a result of language change triggered by language contact.

5. LOCALITY OF MERGE

At this point, I will step back and see what general conclusions can be drawn from the facts that we have seen with Correlatives. Before we do that, let us go over our main findings so far. We saw that Simple Correlatives could be assigned either (or both) of the structures shown in (58).

(58)a. base-generation in IP adjoined position:
$[_{IP}[_{CorCP}$ which CD is on sale$]_i$ $[_{IP}$ Ram bought that-CD$_i$ $]]$

b. base-generation in Dem-XP adjunction, plus movement of Correlative clause:
[which CD is on sale$]_i$, $[_{IP}$ Ram bought $[t_i$ that-CD$_i$ $]]$

However, the grammar utilizes *only* the Dem-XP adjunction structure (cf. 58b). Similarly, in principle, (59a, b) are both viable structures for Multi-Head Correlatives.

(59)a. base-generation as adjoined to matrix IP
$[_{MultCorCP}$ Rel$_i$ Rel$_j$ . . .][Bill thinks that $[_{IP}$ . . . Dem-XP$_i$ Dem-XP$_j$ . . .]]

b. base-generated adjoined to embedded IP, followed by movement
$[_{MultCorCP}$ Rel$_i$ Rel$_j$ . . . $]_k$ [Bill thinks that $[t_k$ $[_{IP}$ . . . Dem-XP$_i$ Dem-XP$_j$ . . .]]]

Here, too, the grammar utilizes *only* the structure that involves adjunction to the lower IP (cf. 59b). I propose the following 'Condition on Local Merge' as a way to make sense of this pattern:

(60) **Condition on Local Merge**:
The structure-building operation of Merge must apply in as *local* a manner as *possible*.

The locality of Merge is at stake because in both (58) and (59), the grammar uses the structure in which the Correlative Clause is Merged as locally as possible with the objects which it is *associated with*. In a Simple Correlative, the most local position is adjunction to Dem-XP. In a Multi-Head Correlative, the most local position involves adjunction to the smallest IP which contains the demonstratives associated with the correlative clause.[23]

[23] It is possible to characterize the requirement at play as an 'earliness' requirement. Assuming a derivational approach to structure building, the grammar uses the structure

I have been using *associated with* when I need to talk about the relationship between a Correlative clause and its associated demonstrative phrase(s). What does *associated with* mean? The notion *associated with* is meant to subsume both head-argument relations as well as the relationship that obtains between a modifier and what it modifies. Relative clauses are associated with the noun phrase they modify, the 'head' of the relative clause.[24] Correlative Clauses are associated with the Dem-XPs they occur with.

The **Condition on Merge** that is being proposed here has an *Economy* flavor to it. In an *Economy*-based account, we pick the 'best'/'most economical' derivation/structures among 'okay' derivations/structures in a certain equivalence class. This is exactly what happens in the cases under discussion. For example, base-generated IP adjunction, which is not permitted for Simple Correlatives (cf. 58), is in fact used by Multi-Head correlatives (cf. 59). So the base-generated IP adjunction structure is not proscribed by the grammar – it is just less *economical* and hence not used by Simple Correlatives.

Approaching the Condition on Merge as an economy condition raises the following questions concerning the constitution of the Reference Set. How is the equivalence class determined? Derivations/structures that given a certain numeration yield the same meaning count as equivalent. The notion of meaning needs to be made more precise but for our current purposes, two derivations which are identical with respect to their thematic structure and which make the same associations between Correlative

in which the Correlative clause is merged as early as possible (cf. Pesetsky 1989 for a discussion of Earliness). I do not use this option because then I would predict that modifiers should combine with what they are modifying as early as possible. This would rule out the kind of countercyclic merger that is appealed to by Lebeaux (1990) and others to explain reconstruction asymmetries between complements and adjuncts. If some other account of these asymmetries could be developed (cf. Lasnik 1998), then we would again have a choice between stating the relevant constraint as an 'earliness' requirement or as a 'locality' requirement. It is plausible that in that case the most 'local' requirement will actually be identical to the most 'early' requirement.

[24] The locality Condition on Merge predicts that 'extraposed' relative clauses, e.g., *The book is interesting [that John wrote]*, must originate merged local to the noun phrase they modify. The base-adjunction structure where the relative clause and the noun phrase that it modifies are not merged local to each other is ruled out by the Condition on Merge. An anonymous reviewer wonders how well this prediction fits with the fact that there exist relative clauses where a NP adjunction source seems implausible: *the man and the woman who met each other on the train* (DP adjunction), and *A man just walked in and a woman just walked out who couldn't bear to look at each other* (IP adjunction). It is not clear to me what predictions my analysis makes here because it is not clear to me what the competing (more local) structures would look like, whether they would be well formed and, finally, whether they would be equivalent to the attested structures.

clauses and their associated Dem-XPs count as equivalent. More generally, two derivations based on the same numeration that have identical dependencies would count as equivalent.

The second question that arises with respect to the constitution of the Reference Set is: what structures count as 'okay'? The answer to this question turns out to be, at first glance, counterintuitive. We find that certain structures that violate Condition C count as 'okay' and enter the Reference Set.

To bring the issue into focus, consider (61), which is a schematized version of (39b).

(61) $^{*}[_{CorCP} \ldots \text{Name}_j \ldots]_i \; [\text{Pron}_j \; \text{Dem-XP}_i \ldots]$

The two structures that are in principle viable for (61) are shown in (62).

(62)a. Base-generation in an IP-adjoined position:
$[_{CorCP} \ldots \text{Name}_j \ldots]_i \; [\text{Pron}_j \; \text{Dem-XP}_i \ldots]$

b. Base-generation in a Dem-XP adjoined position followed by fronting:
$[_{CorCP} \ldots \text{Name}_j \ldots]_i \; [\text{Pron}_j \; [t_i \; \text{Dem-XP}_i] \ldots]$

The structure in (62b) gives rise to Condition C violation at LF due to reconstruction of the Correlative clause. No such violation is triggered by the structure in (62a). Now if only structures that were truly 'okay' entered into the Reference Set for the Condition on Merge, (62b) would not make it. The reference set would only contain (62a) and, consequently, it would be the structure that the grammar used and we would, counter to fact, not find any Condition C violation in (61). From the preceding discussion, and in particular the discussion in section 3.3, we know that the grammar actually picks the structure in (62b) over the structure in (62a).

The question that arises now is why structures that violate Condition C can still enter the Reference Set for the Condition on Merge. I believe that the answer lies in the fact that Condition C, like certain other well-formedness conditions discussed in Fox (2000) such as Parallelism and the Coordinate Structure Constraint, applies very late (see also Heycock and Kroch 1999). As such, it can only function as a filter on possible structures. It can never feed another process.

If the Condition on Merge is to have real explanatory value, one would expect to find it operative in languages other than the Indo-Aryan languages for which it is proposed. It is not easy to find cases in English which bear upon this principle one way or the other. This is because this principle

comes into play only when the language has an option between two ways of merging a syntactic element, and there do not seem to be any such cases in English. To see this point clearly, I refer the reader back to (58) and (59). The syntax of Hindi, in principle, allows for both structures to convey the same meaning.[25] Then the Condition on Merge rules out the structure that involves a less local instance of Merge. Crucially for us to be able to detect an application of the Condition on Merge, the language in question must allow for equivalent structures that differ only in where a particular constituent is merged. In English, as far as I can tell, a difference in the Merge position of a modifier leads to non-equivalent structures which cannot be compared by the Condition on Merge. To explore the crosslinguistic implications of the Condition on Merge, it is therefore more useful to look at languages where the Condition on Merge can apply non-vacuously. I consider two such cases: Correlatives in Bulgarian, and Clitic Left Dislocation in Modern Greek. I will also discuss an instance from Hindi where the Condition on Merge provides a solution to a problem concerning the variable optionality of demonstrative phrases in correlatives.

5.1. *Crosslinguistic Comparisons 1: Correlatives in South Slavic*

Outside the Indo-Aryan languages, Correlatives are also found in the South Slavic languages. Izvorski (1996) presents data from Correlatives in Bulgarian that seems to provide exactly the counterexample whose (non-)existence we are investigating.

In Bulgarian, it seems that it is the demonstrative element that Moves, rather than the Correlative clause itself.

(63) Movement of Dem is obligatory (Bulgarian, from Izvorski 1996)

a′. [Correlative-clause]$_i$ [$_{IP}$ Dem-XP$_i$ … t_i …]

a. [Kolkoto pari iska]$_i$ *tolkova*$_i$ misli če šte i dam t_i
how-much money wants Dem-much thinks that will her give-1Sg
She thinks that I'll give here as much money as she wants.

b′. *[Correlative-clause]$_i$ [$_{IP}$ … Dem-XP$_i$]

[25] Other instances where the notion of 'same meaning' has been appealed to when computing the comparison class for economy computations include Adger (1995) and Fox (1995, 2002).

b. *[Kolkoto pari iska]$_i$ misli če šte i dam
how-much money wants thinks that will her give-1Sg
tolkova$_i$
Dem-much

At first sight, this looks like a counterexample to the Condition on Merge. The Correlative clause does not seem to be merged in the most local position possible, i.e., adjoined to Dem-XP. However, this counterexample turns out only to be an apparent counterexample because the South Slavic languages do not have the Dem-XP adjunction structure from which we are deriving the IP adjunction order.

(64) Dem-XP adjunction is not possible (Bulgarian).
*[$_{IP}$ XP ... [$_{Dem-XP}$ [Correlative-Clause]$_i$ Dem-XP$_i$] ...]
*misli če šte i dam [[Kolkoto pari iska]$_i$
thinks that will her give-1Sg how-much money wants
tolkova]
Dem-much
She thinks that I'll give her as much money as she wants.

The *Economy* nature of the Condition on Merge becomes applicable – the language does not have the option of Dem-XP Adjunction, so it chooses the next most local option, IP adjunction.[26]

5.2. *Crosslinguistic Comparisons 2: Clitic Left Dislocation*

Clitic Left Dislocation structures in Modern Greek provide us with exactly the right options for the Condition on Merge to apply. Clitic Left Dislocation is exemplified in (65).

(65) Modern Greek (from Iatridou 1994)
ton Kosta, i Maria ton idhe
DET Kosta/ACC DET Mary/NOM him saw
Kosta, Mary saw him.

[26] An anonymous reviewer notes that the claim that Correlative clauses in South Slavic involve IP adjunction rather than Dem-XP adjunction makes the prediction that Slavic Correlatives should parallel Hindi Multi-Head Correlatives with respect to locality effects and reconstruction effects. Unfortunately, I have been unable to check whether this prediction is borne out.

It can be shown that the 'left dislocated' NP *ton Kosta* is base-generated adjoined to IP (cf. Cinque 1990; Iatridou 1994; Anagnostopoulou 1994). However, we find 'movement' effects with Clitic Left Dislocation:

(66) Islands: *DP_i ... [$_{Island}$ ... $Clitic_i$ ...]

* ton Kosta, sinandisa tin kopela pu ton idhe
DET Kosta/ACC (I-)met DET girl who him saw
(Lit. 'Kosta, I met the girl who saw him.')

Iatridou (1994) relates these effects to the Left Dislocated NP, starting off base-generated to the smallest IP containing the clitic. The movement effects are due to the movement of the Left Dislocated NP from its IP adjoined position.

The Clitic Left Dislocation facts behave exactly as predicted by the Condition on Merge. To see why, let us look at the two possible structures for (66) in (67).

(67)a. DP_i [... [$_{island}$ [$_{IP}$ ... $Clitic_i$ ...]]]
Non-local Merge, No movement, No island violation

b. *DP_i [... [$_{island}$ [t_i [$_{IP}$ ... $Clitic_I$ ...]]]]
Local Merge followed by movement, Island violation

The existence of island effects shows that the language chooses (67b), which is the structure that involves a more local application of Merge.

5.3. *The Condition on Merge at Work: Evidence from Absent Demonstratives*

In the preceding sections, we have seen the Condition on Merge at work in Bulgarian Correlatives and in the Modern Greek Clitic Left Dislocation construction. The Condition on Merge also helps in solving a puzzle involving the distribution of Dem-XPs in the matrix clause of a Correlative construction. Correlative clauses, usually, require the presence of a Dem-XP associated with them in the matrix clause (cf. section 2.3.3).

(68) Omission of Dem-XP leads to ungrammaticality
[jo laRkii khaRii hai] [Ram *(us-ko pasand kar-taa hai]
Rel girl standing.F is Ram (Dem-Dat like do-Hab is
Ram likes the girl who is standing.

The demonstrative requirement is an important difference between Relative clauses and Correlative clauses. However, there are some exceptions to the demonstrative requirement (cf. 69).

(69) Missing Dem-XP
[jo laṛki: khaṛi: hai] lambii hai
Rel girl standing.F be.Prs tall.F be.Prs
[Which girl is standing] is tall.

In the absence of a demonstrative phrase, Correlative clauses in Hindi seem to display matching effects of the kind familiar from Free Relatives (cf. Bresnan and Grimshaw 1978, Groos and van Riemsdijk 1979). It turns out that the Dem-XP can only be absent under the following conditions:

(70) form(Case(Rel-XP)) = form(Case(Dem-XP)) = ϕ (from Bhatt 1997)

The matching condition in (70) has two parts. The first part says that the surface form of the case of the Rel-XP and the Dem-XP must be the same. This is why it is not possible to omit the Dem-XP in (68), where the Rel-XP receives non-overt nominative case and the Dem-XP receives overt dative case. The second part of (69) says that the surface form of both the Rel-XP and the Dem-XP must be ϕ. This is illustrated by the contrast between (69) and (71).

(71) [jis laṛke-ne sports medal jiit-aa] [*(us-ne) academic
Rel boy-Erg sports medal win-Pfv Dem-Erg academic
medal-bhii jiit-aa]
medal-also win-Pfv
The boy who won the sports medal also won the academic medal.

Both (69) and (71) display Case Matching. However, the case on the Rel-XP and the Dem-XP in (71) is the overt ergative and the Dem-XP may not be absent.

Srivastav (1991) analyzes cases like (69) as involving a *pro* (cf. 72).

(72) Srivastav (1991)'s analysis: $[[_{CorCP} \ldots]_i\ [_{IP}\ pro_i \ldots]]$
[jo laṛki: khaṛi: hai]$_i$ [*pro*$_i$ lambii hai]
Rel girl standing.F be.Prs tall.F be.Prs
[Which girl is standing] is tall.

The existence of matching effects does not follow from this structure but, as an anonymous reviewer suggests, it is possible to attribute the presence of matching effects in (72) to some form of an identification requirement on the *pro*.

An alternative analysis of matching effects found with Dem-XP-less Correlatives is presented by Bhatt (1997), who takes the presence of matching effects to show these Correlatives are actually Free Relatives. Free Relatives can be treated as CPs adjoined to a *pro* that occupies an argument position (cf. Harbert 1983; Suñer 1984; Grosu 1987; among others).

(73) Free Relative structure for Dem-XP-less Correlatives
$[_{IP}\ [_{FR}[_{CP}\ \ldots]\ pro]$ is good]
$[_{IP}\ [_{FR}[_{CP}$ jo kita:b sale-par hai] *pro*] achchhi: hai]
Rel book.F sale-on be.Prs good.F be.Prs
(Lit. '[Which book is on sale] is good.')

5.3.1. *Free Relative Fronting vs. Correlative Fronting*
There is evidence that Dem-XP-less Correlatives behave like Free Relatives. Recall that two Correlative clauses cannot be fronted simultaneously (cf. section 3.2.2).

(74)a. *CorCP_1 CorCP_2 $[_{IP}$ ... Dem-XP_1 ... Dem-XP_2 ...]
b. *CorCP_2 CorCP_1 $[_{IP}$ ... Dem-XP_1 ... Dem-XP_2 ...]

However, a Correlative clause with a 'covert' Dem-XP and a Correlative clause with an overt Dem-XP can be simultaneously fronted. Cf. the contrast between (75) and (74).

(75)a′. CorCP_2 CorCP_1 $[_{IP}$ ... Dem-XP_1 ...]

a. [jo kita:b Shantiniketan-ne chha:pi: thi:]$_2$ [jo
Rel book Shantiniketan-Erg publish-Pfv.F be.Pst.F Rel
laṛka: tumha:re pi:chhe hai]$_1$ Ram-ne [us laṛke-ko]$_1$
boy-Dat your behind be.Prs Ram-Erg Dem boy-Dat
dii
give-Pfv.F
Ram gave the book that Shantiniketan has published to the boy who is behind you.
(Lit. '[Which book Shantiniketan had published]$_i$ [which boy is standing behind you]$_j$, Ram gave t_i to [t_j that-boy$_j$]')

b′. $\text{CorCP}_1\ \text{CorCP}_2\ [_{IP} \ldots\ \text{Dem-XP}_1 \ldots]$

b. [jo laṛka: tumh:re pi:chhe hai]$_1$ [jo kita:b
Rel boy-Dat your behind be.Prs Rel book
Shantiniketan-ne chha:pi: thi:]$_2$ Ram-ne [us
Shantiniketan-Erg publish-Pfv.F be.Pst.F Ram-Erg Dem
laṛke-ko]$_1$ di
boy-Dat give-Pfv.F
Ram gave the book that Shantiniketan had published to the boy who is behind you.
(Lit. '[Which boy is standing behind you]$_j$ [Which book Shantiniketan had published]$_i$ Ram gave t_i to [t_j that-boy$_j$]')

The contrast between (74) and (75) receives an explanation once we note that Correlative clauses without an overt Dem-XP are not Correlative clauses that have been separated from a covert Dem-XP. Instead they are just Free Relative clauses which, like other nominal arguments in Hindi, can undergo A-scrambling. Consequently, the principle that rules out the cases in (74) does not rule out the cases in (75).

5.3.2. *Matching Effects in Multi-Head Correlatives*
Based on the discussion in the preceding section, we can conclude that Dem-XP-less Correlatives can be Free Relatives (cf. 73). However, we cannot rule out the structure in (72) for Simple Correlatives yet. In what follows, we will show that (72) is not a possible structure for Dem-XP-less Simple Correlatives, but that it is the structure used for Dem-XP-less Multiple Correlatives.

The crucial evidence against the availability of (72) for Simple Correlatives comes from Multi-Head Correlatives. Multi-Head Correlatives display matching effects, but these matching effects are not exactly the same as the matching effects found with Simple Correlatives.[27] They can be stated as follows.

(76) $\text{form}(\text{Case}(\text{Rel-XP}_1)) = \text{form}(\text{Case}(\text{Dem-XP}_1))$,
$\text{form}(\text{Case}(\text{Rel-XP}_2)) = \text{form}(\text{Case}(\text{Dem-XP}_2)), \ldots$

What differentiates (76) from the matching requirement on Simple Correlatives in (70) is the absence of the = ϕ clause. This can be seen in (77),

[27] I thank an anonymous reviewer whose detailed and penetrating comments made me realize this.

where it is possible for the Dem-XPs to be absent even though not all of the case markers on the Dem-XPs involved are ϕ.

(77) $[_{MultCorCP}$ $\text{Rel}_i \ldots \text{Rel}_j \ldots]$ $[\text{pro}_i \ldots \text{pro}_j \ldots]$ (Dayal, p.c.)
[jis-ne$_i$ jo$_j$ chahaa] [us-ne$_i$ vo$_j$) kiyaa].
Rel-Erg Rel want-Pfv Dem-Erg Dem do-Pfv
People did what they wanted.
(Lit. 'Whoever whatever wanted, they did that')

As discussed in earlier sections, only an IP adjunction structure similar to the one in (72) is available for (77). It stands to reason that the structure in (72) is responsible for the matching requirement in (76). But the matching requirements imposed by this structure (= 76) are distinct from the matching requirements found with Simple Correlatives (= 70). We can therefore conclude that the structure in (72) is not available for Simple Correlatives. This unavailability receives a natural explanation given the Condition on Merge. The Condition on Merge rules out the IP-adjunction structure for Dem-XP-less Correlatives in favor of the *pro*-adjunction Free Relative structures.

(78) Structures for Correlatives without Dem-XPs

a. DP Adjunction Structures:
$[_{CorCP}$ Rel-XP $\ldots]_i$ $[_{IP}$ YP $[t_{i,CP}$ $\text{pro}_i]$ $\ldots]$
$[[_{CorCP}$ Rel-XP $\ldots]pro_i$ $[_{IP}$ YP $[t_i$ $\ldots]$

b. $[_{CorCP}$ Rel-XP $\ldots]_i$ $[_{IP}$ YP $\text{pro}_i]$ $\ldots]$ (unavailable)

As for the Multi-Head Correlative, the IP adjunction structure is the most local structure, a *pro*-adjunction structure not being an option. Consequently, (72) with its different matching requirements is available.[28]

6. Conclusions and Questions Raised

This paper argues against a uniform analysis for Simple and Multi-Head Correlatives. It shows that the Correlative clause in a simple correlative must be merged local to the demonstrative phrase it is associated

[28] I am leaving open the question of why the matching requirements associated with (72) and (73) differ in the way they do. I speculate that the non-overtness requirement on Case found with Free Relatives is related to the fact that Case Clitics in Hindi require nominal hosts and that Correlative/Free Relative clauses are not able to satisfy this requirement. Non-overt Case does impose any comparable requirements. Finally, Multi-Head Correlative clauses are just not in a position where they could be affected by the morphological requirements of case clitics in the matrix clause. See Bhatt (1997) for related discussion.

with. With Multi-Head Correlatives, the 'adjunction to the demonstrative phrase' option is structurally unavailable and we find that Multi-Head Correlatives must be adjoined to the smallest IP that contains the demonstrative phrases associated with the Multi-Head Correlative.

The facts from our analysis of Correlatives motivate the Condition on Merge: Merge as locally as possible. This Condition on Merge is shown to receive some crosslinguistic support from Clitic Left Dislocation facts in Modern Greek. It was also shown that the Condition on Merge helps provide an explanation to the problem of absent demonstrative phrases in Hindi Correlatives.

The paper demonstrates at some length that Correlatives involve optional movement and that it is the Correlative clause that moves. But we have not addressed so far the question of why the Correlative clause moves. To fully address this question will go beyond the scope of this paper. Here I will limit myself to a few suggestions. The first line of attack is to connect the optional movement of the Correlative clause to the optionality of scrambling. The (apparent) optionality of scrambling has been discussed among others by Miyagawa (1997), and it is possible that an account along the lines of Miyagawa's can be constructed for the movement of Correlative clauses also.

In the remainder of this paper, I will discuss another reason for the movement of the Correlative clause. In some, but not all cases, movement of the Correlative clause seems to make available new interpretive possibilities. This effect of the movement of the Correlative clause is sometimes quite striking as in the following Marathi example from Andrews (1985).

(79)a′. $[_{CorCP}$ which woman is in the kitchen . . . $]_i$
$[_{IP}$ Ram thinks [[[t_i that-woman$_i$] is not in the kitchen]]

a. [dzi bai kičan madhe ahe]$_i$ Ram-la waṭṭe ki [[t_i [ti
Rel woman kitchen in is Ram-Dat thinks that Dem
bai]$_i$] kičan madhe nahi]
woman kitchen in Neg.is
sensible reading: 'Woman X is in the kitchen, Ram thinks that Woman X is not in the kitchen.'
contradictory reading: 'Ram thinks that the woman who is in the kitchen is not in the kitchen.'

b′. Ram thinks [[$_{CorCP}$which woman is in the kitchen. . .]$_i$
[[t$_i$ that-woman$_i$] is not in the kitchen]]]

b. Ram-la waṭṭe ki [[ǰi bai kičan madhe ahe]$_i$ [[t_i [ti
Ram-Dat thinks that Rel woman kitchen in is Dem
bai]$_i$] kičan madhe nahi]]
woman kitchen in Neg.is
contradictory reading: 'Ram thinks that the woman who is in the kitchen is not in the kitchen.'

The Correlative clause in (79a) can be interpreted either with respect to the utterance world – giving us the sensible reading, or with respect to the world(s) of Ram's thoughts – giving us the contradictory reading. The Correlative clause in (79b) can only be interpreted with respect to the world(s) of Ram's beliefs – giving us the contradictory reading.

Why this should be so is not clear. A possible explanation could go as follows. Assume that world variables in Marathi must be bound locally. Given a mechanism for Reconstruction (e.g., the Copy Theory of Movement (Chomsky 1993, 1995), we can locally bind the world variable of the Correlative clause in (79a) in either of its locations – matrix clause or embedded clause – accounting for the two readings. The world variable of Correlative clause in (79b) can only be bound locally by the the world(s) of Ram's thoughts. To be bound locally by the utterance world, it would have to covertly move out of a finite clause. However, we have seen earlier that covert movement in the Indo-Aryan languages is finite-clause bound. Hence, the only reading available is the contradictory reading.

However, there are several problems associated with the line of argumentation suggested above. Examples similar to (79b) are ambiguous in English.

(80) Bill thinks that the earth is larger than it is.

As an anonymous reviewer points out, the sensible *de re* reading of (80) cannot be a matter of scope. As discussed by Hoeksema (1984), Heim (1985), Rullmann (1995), and Kennedy (1997), among others, the comparative clause may contain a pronoun bound by an operator which is construed in the scope of a propositional attitude verb. Still, such cases have a consistent *de re* interpretation where the world variable of the degree clause is bound by the world in which the propositional attitude verb is evaluated (cf. 80).

(81) (from Heim 1985)

a. We believed that every problem$_i$ was harder than it$_i$ was.

b. We expect that every boy$_i$ thinks he$_i$ is brighter than he$_i$ is.

In other words, we need to be able to bind world variables non-locally (cf. 'double indexing' in Postal 1974).

Of course, it is possible that languages differ in whether they allow for world variables to be bound non-locally. For example, the Indo-Aryan languages seem to lack both a morphological sequence of tense rule as well as any 'Double Access Reading.' Thus the Hindi equivalent of 'John said that Mary is pregnant' means that according to John's speech act, Mary was pregnant at the time of John's speech act. I will not pursue this potentially promising line because I am not completely convinced that the claim that world variables are bound locally holds up even for all Indo-Aryan languages. Consider (82), which is the Hindi counterpart of the Marathi (79b).

(82) Ram thinks [[$_{CorCP}$ which woman is (really) in the kitchen . . .]$_i$ [[t_i that-woman$_i$] is not in the kitchen]]]

Ram soch-taa hai ki [[jo aurat (sachmuch) rasoi-me hai]$_i$ [[t_i [vo]] rasoi-me nahii hai]]

Ram think-Hab.MSg be.Prs that Rel woman really kitchen-in is Dem kitchen-in Neg be.Prs

without *sachmuch* 'really': contradictory reading: 'Ram thinks that the woman who is in the kitchen is not in the kitchen.'

with *sachmuch* 'really': sensible reading: 'The woman who is really in the kitchen, Ram thinks that she is not in the kitchen.'

In the absence of an adverb like *sachmuch* 'really', (82), like (79b), only has a contradictory interpretation. However, in the presence of an adverb like *sachmuch* 'really', a non-contradictory interpretation becomes available. This seems to me to argue against a scopal account for the interpretations of (79a, b). Perhaps what we have is a tendency for world variables to be bound locally, a tendency that can be overridden in the presence of an adverb like *sachmuch* 'really'. A proper explanation of the puzzle posed by (79) is left for future work.

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