

SYNTACTIC ADJUNCTION: CONSEQUENCES FOR CORRELATIVES IN SANSKRIT AND HINDI/URDU

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In this paper I explore the adjunction relations between finite clauses in two stages of the Indic languages, the earliest Sanskrit found in the Rg-Veda and didactic prose, and in the modern languages Hindi and Urdu which share the same grammar and a common lexicon but draw on different lexical resources and script¹. Finite clauses in Sanskrit and Hindi-Urdu are in many ways comparable, but I will propose that there is a striking difference in how finite clauses combine syntactically in earliest Indic and Hindi-Urdu. This single difference has many repercussions for what is allowed as a well-formed combination of finite clauses. I propose that the modern language has a strict requirement for asymmetric c-command which is not found in earliest Sanskrit, so that the modern language is far more restrictive in what combinations are allowed. This difference also has consequences for the lexical specification of question and relative phrases.

1. Finite clauses in Vedic Sanskrit (Old Indic) and Hindi (Modern Indic)

I begin with an overview of finite clause types in Sanskrit and Hindi-Urdu. Relative clauses are overtly marked. Relative determiners and pronouns in modern Indo-European language are not distinguished lexically from interrogative determiners and pronouns, except in the modern Indic languages, which preserve the lexical distinction in Sanskrit. Relative determiners (y/j series) are distinct from the interrogatives (k-series). Correlative clauses are found in both languages, adjoined to left or right of the clause containing the *correlate XP* modified by the relative

1.1. Finite clause types

There are three finite clause types which will figure in the comparison of Sanskrit with Hindi-Urdu, correlative, interrogative and complement clauses. Relative clauses are given in (1a) and (2a). In both Sanskrit and Hindi-Urdu, the relative pronoun or determiner normally moves to the left periphery, but this movement is not an absolute requirement. Interrogatives are given in (1b) and (2b). Movement to the left is the norm for Sanskrit, while in Hindi-Urdu, interrogatives are normally in situ in surface syntax.

A correlative clause is a finite relative clause containing both a relative determiner and a common-noun specification, or a relative pronoun. Relative words may belong to many different categories: Determiner, quantifier, adverbial or pronoun (see Appendix). The correlative clause is linked syntactically to another finite clause which contains the *correlate*, to use the term adopted in Landman and Grosu (1988), Grosu (2001). This is a phrase which is coindexed with the relative phrase, and is in effect the head of the relative clause which is modified by the relative clause. In this paper I will leave open the question of whether the coindexation comes about by anaphora (Dayal 1995, Bhatt 2004) or movement (Mahajan 2001, Bhatt 2005). This paper, I will use bold type for the relative constituent and italics for the correlate, with appropriate indices for clarity.

1. Vedic Sanskrit

a. [Relative]

. [yád īm uśmāsi kār-tave] karat tát
what-ref he-acc be-eager-pres-1pl do-inf do-pres-3s that
RELATIVE CORRELATE

[What(i) we are eager for him to do t], he does that(i)' (R.V. 10.74.6, Delbrück 1888, p.

b. [Interrogative]

kám āpo ádrim paridhím rujanti
int-acc waters-nom cliff wall break-pres-3pl
INT-DET

'Which cliff as wall do the waters break t? R.V. 4.146d, Etter 1985, p. 73

c. [Dependent clause]

[tyām stośāma ...] iti tvā agne . . . ṛṣayah avocan
you-acc praise-fut-1pl quote you-acc Agni-voc sages say-aor-3pl

[We shall praise you...]-quote the sages tell you, Agni.' R.V. 10.115.8-9 (Hock 1982, p.49)

2). Hindi-Urdu

a. [Relative]

[us-nee joo ciiz-eeN tooR-ii haiN] un-kii kiimat us-kii tankhvaah-see zyaadaa hai
3s-erg rel thing-pl break-pf are 3pl-gen price 3s-gen wages-from more is
RELATIVE CORRELATE

' [Which things(i) he has broken t]] their(i) price is more than his salary.' Rakesh 161, p 19

b. [Interrogative]

aap [kisee sab-see acchaa ummiidwaar] samajh-tee haiN?
you int-dat all-than good candidate understand-impf are
INT-XP

'Who do you consider [who the best candidate]?'

c. [Dependent clause]

maiN-nee sooc-aa [ki [raat maarmugaaNw-meeN rah-kar] saweeree feerii-see
I-erg think-pf that night Marmu-ganw-in stay-prt dawn ferry-with
panjim cal-aa jaa-uuNgaa]
Panjim go-pf go-fut-1sg-m.

'I thought [that I would spend the night in Marmu-ganw and go on by ferry at dawn.'

Rakesh 1963, p. 32.

Complement or dependent clauses (1c-2c) are marked in distinct ways in Sanskrit and Hindi-Urdu. Hindi-Urdu (1c) uses an optional clause prefix *ki* which is a relatively recent addition to the language, borrowed from Persian, where (in the form *ke*) it literally means 'what?' and is used to mark a variety of subordinate clauses, adverbial, relative and complement clauses (Hajati 1977)

Sanskrit, however, has no such lexical marker specifically for complement clauses. Many complement clauses are marked as ‘direct’ quotes with *iti* ‘thus’, which is normally a suffix but may be a prefix or free-standing element, and may mark other phrases besides clauses (Hock 1982). I will propose that this difference between Sanskrit and Hindi-Urdu in finite clause marking reflects the difference between the languages in the syntactic relations between finite clauses.

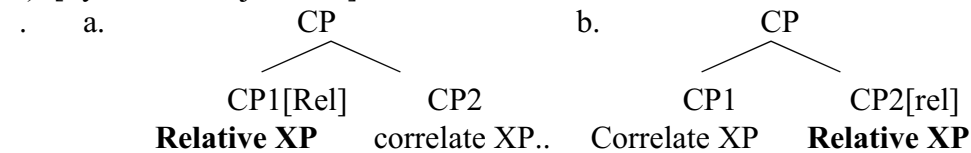
1.2 Syntactic adjunction of finite clauses: symmetry and asymmetry

When two finite clauses are combined, so that one clause modifies the other, there is a syntactic relation of adjunction. Under standard assumptions, when XP adjoins to YP, either XP projects or YP projects. If XP is a complement, then XP may satisfy a theta, subcategorization requirement of YP. Otherwise, if XP is a relative or adverbial clause, the argument structure of YP is unaffected by XP (a modifier). Instead, there is semantic category composition at the Conceptual-Interpretative interface (Chomsky 2004).

If two finite clauses are in an adjunction relation, then adjunction may be symmetric (for example CP adjoins to CP), or asymmetric (CP adjoins to TP, which then projects further as CP). These two possibilities are illustrated in (4) and (5). The structures in (4) were proposed by Hock (1989) to represent relative clauses adjoined to the left or right in Sanskrit. The structures in (5) have been proposed to represent left and right-adjoined correlatives in Hindi and Urdu.

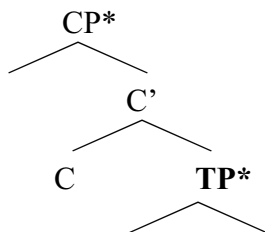
Symmetric adjunction adjoins CP to CP, so that the category/label of the dominating node does not specify whether CP1 or CP2 projects to CP in (4a,b). For the purposes of this paper, I will assume that relative CP may adjoin either to the left of TP or to the right of TP. I will propose that the adjunction relation found in Sanskrit is symmetric (4), as originally proposed by Hock (1989). Asymmetric adjunction, however, is the clause relation for Hindi-Urdu (5):

4) [Symmetric adjunction]

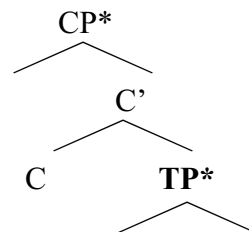


5). [Asymmetric adjunction]

a. Left relative



b. Right relative



CP[Rel] TP
relative XP correlate. XP ...

TP **CP [Rel]**
correlate.XP. . . **relative** XP

Asymmetric adjunction of CP to TP specifies TP as the category which projects (as TP*). TP* is the complement of CP*. Matrix C is construed with constituents of TP, as we will see in examples below. In both Sanskrit and Hindi-Urdu, the adjoined relative CP is construed with its correlate XP in TP. I will treat this coindexing as an agreement relation driven by the anaphoric feature [Rel] and other features proposed in Grosu 2002, as I will show in more detail below

1.3 Consequences of the difference of adjunction relations in Sanskrit and Hindi-Urdu

There are a number of consequences of the difference in adjunction relations, shown in (4) and (5). The main body of this paper will be devoted to deriving these consequences from this single difference. The first effect has to do with the c-commands relations between finite clauses. Hindi adjoined finite clauses asymmetrically c-command the 'main' clause, while Sanskrit finite clauses mutually c-command each other. The second consequence affects locality conditions, which define the 'search space' in which syntactic operations may occur. Asymmetric c-command is necessary for locality conditions, and for the syntactic representation of subordination. Although Sanskrit expresses the semantic relations of complement or modification, it does not encode subordination in distinct syntactic subordination structures. Modern Indic languages such as Hindi-Urdu do syntactically encode subordination. The third consequence affects Sanskrit complement clauses. Vedic Sanskrit allows no indirect (embedded) questions—they are direct quotes or relative-marked, with an interrogative interpretation. So a complement clause cannot be syntactically marked as both subordinate and interrogative. Instead it defaults to the symmetric adjunction relation in syntax, which requires relative marking. Finally, locality conditions found in Hindi-Urdu seem to be largely absent in Vedic Sanskrit. Vedic Sanskrit allows combinations which in the corresponding Hindi versions are ungrammatical. Hindi locality violations are consequences of asymmetric adjunction, which is absent in Vedic Sanskrit.

2. Dependent clauses, finite and non-finite finite clause

Sanskrit and Hindi-Urdu make morphological and syntactic distinctions between finite and non-finite clauses. Finite morphology: in both languages is expressed as marking for tense, aspect, and person-number agreement. Giorgi and Pianesi 1997 argue that person agreement characterizes finite morphology. Non-finite morphology is found in participles and infinitives. Infinitives have nominal properties, with case inflection, and participles are adjectival, with number, gender and case inflection. Small clauses also constitute a kind of non-finite clause. Vedic Sanskrit and Hindi-Urdu are remarkably similar in the selection conditions and morphological form of non-finite clauses, while differing rather sharply in the expression of finite clauses.

2.1. Non-finite clauses

Both Sanskrit and Hindi-Urdu clearly encode subordination syntactically if the subordinate

clause is non-finite. Matrix verbs select for complements with specific non-finite forms (6)-(9). Matrix verbs in Hindi select for small clauses (6ab) imperfective aspectual participles (7ab), nominative infinitives (8ab) or an oblique infinitive (9ab).. These complements are very clearly distinguished by verbal morphology from finite complements.

6) Small clauses

a. [Sanskrit]

. **revántam . . .tvā** śṛṇomi
 rich-acc 2s-acc hear-pres-1s
 ‘I hear [you (to be) rich]. R.V.1.10.10, Hock 1982, p. 43

b. [Hindi]

raam [**apnee aap-koo paRhaakuu**] nahiiN samajh-taa hai
 Ram self's self-dat nerd not understand-impf is
 ‘Ram does not consider [himself a nerd].’

7) Exceptional Case Marking/Raising to Object [Sanskrit]

a.. arúṇo **mā** sakṛd vṛkah
 reddish 1s-acc once wolf-bom
pathā yántam dadárśa hí
 path-inst go-impf-acc ptcl

On one occasion a reddish wolf saw [me going along the road] RV 1.105.18a Hettrich 178

b. Exceptional Case Marking [Hindi]

eek bheeRiyaa-nee [hameeN jaNgal-meeN jaa-tee hu-ee] deekh-aa
 one wolf-erg we-dat forest-in go-impf be-pf see-pf
 ‘A wolf saw [us walking in the forest.]’

8) Subject Control

a.[Sanskrit]

sá veda devá **ānán-am**
 ptcl know-pres-3s bend-caus-inf-acc
 ‘The god knows [(how) to steer here].’ (R.V. 4.8.3, Delbrück 1888, p. 417)

b. [Hindi-Urdu]

woo [PRO tair-naa] jaan-taa hai
 3s swim-inf-nom know-impf is
 ‘He knows [(how) PRO to swim].’

c. usee [PRO tair-naa] aa-taa hai
 3s-dat swim-nom come-impf is
 ‘He knows [(how) PRO to swim].’

9) Object control

a. [Sanskrit]

yuyóta **no** **anapatyáni** **gán-toh**
prevent-3s we-acc childlessness go-inf-abl

‘He prevented us from [PRO going to childlessness/becoming childless].’
(R.V. 3.54.18, Delbrück 1888, p. 4178) Subject/Object Control [Hindi]

b. in loogooN-koo kyooN [PRO e aa-nee di-yaa, idhar?
these people-dat why come-inf give-pf in here

‘Why did you let these people [PRO come in here]? Renu p. 26

There are a number of conclusions which can be based on these examples. First, it is clear that in spite of the very free word order of Sanskrit that c-command relations govern complement selection and case checking. Matrix predicates select non-finite complements and place restrictions on the case of the nominal subject and the morphology of the verb in the non-finite clause. The checking of case is based on movement of the cased phrase and projection of the V or other case-assigner. See Schauffele 1990 for discussion of the evidence for c-command in Sanskrit, abstracting away from variation of word order. Second, there are strong abstract resemblances between Hindi-Urdu and Sanskrit in the non-finite complement clauses, in spite of differences in the case systems of the two languages. Sanskrit lacks the ergative subject case found in Hindi-Urdu, for example, and has few predicates with dative experiencer arguments. Hindi-Urdu marks objects with nominative case or dative case instead of a distinct accusative case, and lacks the double accusative objects found in Sanskrit. Nevertheless the two languages are close enough to be comparable, both for the relative-interrogative distinction and for non-finite clauses. The locality differences which will be pointed out below will not follow from some massive lack of connection between the grammars of the two languages, but rather from one specific difference between two very similar languages. Third, there is a formal difference between the two languages in the expression of finite clauses, either as complements or as modifiers, which will be spelled out in more detail below.

2.2. Semantic selection for finite complements

Another strong point of similarity between Sanskrit and Hindi-Urdu is in semantic selection, determined by the properties of the matrix verb. Though Sanskrit does not mark complement clauses as syntactically subordinate and interrogative, an otherwise unspecified finite clause gets an interrogative interpretation by virtue of the matrix verb.

10) Interrogative main verb [Sanskrit]

sabhām eti kitaváh **pr̥cchámāno**
assembly go-pres-3s gambler-nom ask-part-pr-middle

[**jeṣyāmīti**] tanvā śūśujānah
conquer-fut-1s-quote that-loc swell-perf-prt-middle

‘In the assembly comes the gambler asking, “ I will win?” where he spreads himself.’(Etter 1985 119)

The dependent finite clause **jeṣyāmīti** ‘I will win-quote’ receives its yes/no question interpretation by virtue of the verb ‘ask’. Hindi-Urdu also selects interrogative complements, but they can be marked as both subordinate, with the prefix *ki* ‘that’ and the yes/no question prefix *kyaa* ‘what, Q’ (11):

11) . Interrogative selected by V [Hindi]

ham-nee (yah) **puuch-aa** [*ki kyaa* vee aa-eeNgee (yaa nahiiN)]
 we -erg this ask-pf that what 3pl come-fut (or not).
 ‘We asked [*whether* they will come (or not).’

Matrix verbs of fearing also place strong morphological conditions on their finite complements, in both languages. In Sanskrit, the selected clause must begin with the relative pronoun *yad*, and the verb must be optative. In addition, there is a negative *na* and optionally the quotative *iti* (11).

12) a. Verbs of fearing [Sanskrit]

devā ha vái **bibhayām cakrur** [**yád** vái nah
 gods-nom prtl prtl fearing do-perf-3pl rel prtl 1pl-dat
 asurarakṣasānīmám gráham ná **hanyúr íti**
 asura-rakshas-nom-that-acc spirit-acc not kill-opt-3pl quot

The gods feared [lest (rel) the Asura-Rakshasas . . . kill (opt.) this graha for us (quote)].’

S.B 4, 1.1.19 Delbrück 1888, p. 343:

b. Verbs of fearing [Hindi]

usee **Dar hai** [**ki kahiiN** vee aap-koo **na deekh leeN**]
 3s-dat fear is that somewhere 3pl you-day not see take-subj-3pl
 ‘He/she is afraid [that (somewhere) they will (not) see (contingent) you].’

In Hindi-Urdu, the verb *Dar hoo-naa* ‘fear’ requires a finite clause marked for subordination with *ki*, as well as the special marker for this class of matrix predicate complement *kahiiN* literally ‘somewhere’. There is pleonastic negation *na* and the verb must be in the contingent/subjunctive mood (which shows finite person-number agreement).

Since the same classes of verbs have the same selection properties, we cannot look to the lexical and semantic properties of verbs to explain differences between finite clauses in the two languages. Sanskrit and Hindi-Urdu express the same relationships between finite clauses. I am proposing that there is a difference of syntactic structure, so that same semantic relations in the two languages are not similarly encoded in syntactic terms.

2.4 Special properties of finite clauses in Sanskrit

Sanskrit finite clause have a special property, a series of clause initial positions which may be filled only by a single word (with some exceptions). Specific positions may be filled only by accented or unaccented words. This ‘clause initial string’ of words is found in other early Indo-

European languages, including Vedic Sanskrit, Avestan, and stages of Old Persian (Hale (1988), Hock (1989), Schaufele (1990)). An example is found in (11). The components of the clause initial string are discussed in more syntactic detail below.

13) [Sanskrit] Clause initial string

[**yám(i)** **u ha evá** **tát** paśávo manuṣyéṣu ~~yam~~ **kāmam(i)** árohams]
 rel-acc ptcl ptcl ptcl that cattle-pl-nom man-pl-loc rel-acc desire-acc obtain-impf-
 3pl

[**tám(i)** **u ha evá** paśúṣu **tam** **kāmam(i)** rohati]
 that-acc ptcl ptcl ptcl cattle-pl-loc that-acc desire-acc obtain-pres-3s

‘The desire which(i) the cattle obtained among men, he obtains the same desire(i) among the cattle.’ (S.B. 2.1.2.7 Hock 1989, p. 12).

This sentence from Vedic prose is an example of a relative clause adjoined with the clause containing its correlate. The relative determiner *yam* has been moved to initial position away from the NP *kāmam*, and it is followed by discourse particles ‘and’ ‘certainly’ ‘indeed’. The correlate clause is structurally similar: the determiner *tam* ‘that’ is moved to initial position, followed by discourse particles. So both relative and correlate clause contain the clause initial string of pronouns and sentence particles (Hock 1989). The clause initial string therefore does not discriminate in any way between modifier and ‘main’ clauses, unlike Verb-Second phenomena in languages like German. In both clauses, some word is moved to a projection in the left periphery, preceded or followed by particles. Sentences of this sort provide surface evidence for A’ movement in Sanskrit, which is somewhat surprising given the absence of locality conditions on questions and relative clauses to be shown below. Nothing like the clause initial string is found in Hindi-Urdu, which does observe locality conditions, but without obligatory A’ movement. The explanation I will propose rests on the syntactic relation between finite clauses rather than whether movement is overt or not.

3. Syntactic consequences of the presence or absence of asymmetrical adjunction/c-command

3.1 Feature specifications of finite clauses.

I will begin by outlining the ways that finite clauses are feature-marked. These features reflect the lexical and semantic properties of the complementizer, and affect the interpretation of the clause as a whole, as a complement or modifier, and in the latter case, as definite or indefinite. In the case of relative clauses, there is an uninterpretable feature which enters into a checking relation with a category within another clause. Both Sanskrit and Hindi/Urdu relatives have this feature, but its effect is different in the two languages.

Finite clauses have the features listed in (14), which match the features on COMP and are projected to CP.

14) a. Interrogative CP [Int] Semantically indefinite

b. Correlative clauses: [Relative] Anaphoric [Hindi non-restrictive clauses and all Sanskrit clauses] This is an uninterpretable feature whose goal is a category

F.

[Pred] restrictive [Hindi only]
[MAX] definite [Hindi only] Grosu 2002

c. Other finite clauses [Features reflecting verb inflection, such as [Imper]

The uninterpretable feature [Rel] is checked in the correlate clause by a category feature which matches (or is consistent with) the category of the relative phrase, DP, QP, Adv, etc.(see Appendix). This feature is determined by relative lexical form, so that if the clause is lexically and semantically a relative, this is, a modifier clause, the feature is consistent with its semantics, But it will be shown in the next section that not all relative-marked clauses are actually relatives in Sanskrit. Instead the clause is formally a relative but gets the indefinite interrogative interpretation from the feature [Int] determined by its COMP.

3.2. Dependent questions in Vedic are expressed as relative clauses with interrogative meaning.

As noted above, Sanskrit does not allow a finite clause to be marked both as a question and as a dependent clause. There is a rule, found also in Homeric Greek (Smyth 1920, p. 601) This condition applies to the complement of verbs like ‘ask’, ‘wonder’ with question complements and also of verbs like ‘know’, ‘say’, ‘mention’ which select propositions as complements (Lahiri 2002). Matrix interrogatives in Sanskrit have the k-series of interrogative determiners (15)-(16). Dependent questions require the y-series of determiners (17)-(18):

15) [Sanskrit] Matrix question with question complement

kó veda nūnám eṣām
who?-nom know-pres-3s now that-acc
yátrā mādanti dhūtayah
where-rel enjoy-pres-3pl ascetic-nom-pl

‘Who knows now where the ascetics enjoy themselves (R.V. 5.61.14ab, Etter 1985, p. 201).

16) [Sanskrit] Yes-no question

kim aryamaṇó mahás pathā- áti kramema dūd.hyo
what? Aryaman-gen great-gen road-inst surpass-opt- 1pl inferior-pl-acc
‘Should we overcome the base people on the path of the great Aryaman?’

17) [Sanskrit] Complement yes/no question

ná tásya vidma tád u śú prá vocata
not this-gen know-pres-1pl this-acc prt good forth speak-imper-2pl
[yúvā ha yád yuvatyāh kṣéti yóniṣu]
youth.m.-nom prt what-rel young.girl-gen lie-pres-3s womb-loc-pl
‘We do not know of this, tell us well [whether the young man lies in the lap of the young girl.’ (R.V. 40.11ab, Etter 1985, p.210)

18) [Sanskrit] Complement constituent question

nāhám tād bhagavan veda [yátra gamiṣyāmi]
 not I this Lord-voc know-pres-1s where-rel. go-fut-1s

'I do not know, O Lord, [where I will go] (S.B. 14.6.11.1, Hettrich 1989, p.524)

In these examples, the Interrogative 'where?' *kva*, *kū*. is replaced by rel. *yátrā*, and the interrogative prefix *kim* is replaced by relative *yád*; many more examples can be found in Etter (1985) and Hettrich (1988). Interrogative clauses in Sanskrit are marked [Rel] (anaphoric) and [Int] but not [Pred] or [Max], which would introduce a definite interpretation. I take this shift to be evidence that the semantic selection of an interrogative complement by the 'matrix' verb cannot be expressed via syntactic subordination. Instead the combination is expressed as the default option of an anaphorically linked relative clause construction. The interrogative constituent is syntactically marked as [Rel] but gets an interrogative interpretation.

No interrogative to relative shift is found in Hindi-Urdu. The interrogative in a complement clause must be from the k- interrogative series, not the j- relative series.

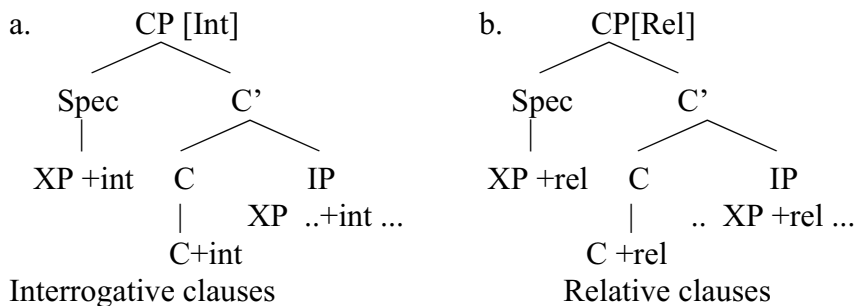
19) ham-nee (yah) puuch-aa [ki kahaan/ *jahaan vee aa-eeNgee]
 we -erg this ask-pf that where-int/*where-rel 3pl come-fut-3plm
 'We asked [where-int they will come].'

From this difference from early Sanskrit, I conclude that Hindi-Urdu allows complement clauses to be encoded syntactically as both interrogative and subordinate. The syntactic relation of subordination is expressed as asymmetric c-command (as finite clauses do not occur in cased, syntactic complement positions (Stowell 1982).

3.3 Locality violations

Hindi-Urdu shows very clear contrasts of grammaticality when questions are combined with relative clauses. These contrasts follow from both clause typing by question and relative phrases and also from the relation between finite clauses of asymmetric c-command. Clause typing is common to Sanskrit and Hindi-Urdu, as in (20), but asymmetric c-command, I propose, is not required in the grammar of Vedic Sanskrit.

20) Clause typing by lexical features on C and Spec C



The XP marked as [Int] or [Rel] must c-command its copy (trace) in a local domain, a relation which can be captured by . Minimality in the sense of Rizzi 1990, or recasting in terms of phases: the copy within a CP phase and not on its edge cannot be linked by a syntactic operation to a constituent outside of that phase. Hindi-Urdu shows contrasts of this kind (21a,b). The difference of syntactic structures is shown in (22a,b).

21) Minimality contrast in Hindi:

Interrogative in main clause

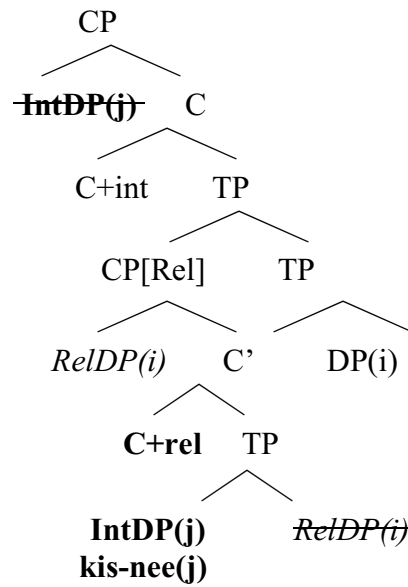
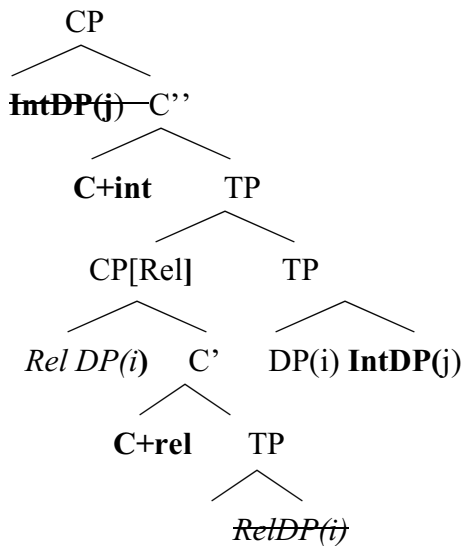
- a. [**jo** **kitaab(i)** us-nee t(i) likh-ii hai] **wo** *kis-koo(j)* sab-see acchii lag-ii?
 rel book 3s-erg write-pf is 3s who-dat all-from good strike-pf
 ‘‘Who likes best the book [that he/she wrote ___]?’’

Interrogative in relative clause

- b. ***[jo kitaab(i) kis-nee (j) t(i) likh-ii hai] wo** aap-koo sab-see acchii lag-ii/?
 rel book who-erg write-pf is 3s you-dat all-from good strike-pf
 *Who did you like best the book [that ___ wrote ___] ?

22) a. Grammatical result (21a)

b. Ungrammatical result (22b)



In both instances, in CP[Rel] the relative **jo kitaab(i)** c-commands its copy; no potential closer c-commander intervenes. In the grammatical (21a), the relative **jo kitaab(i)** is a closer c-commander to the relative marked DP in TP than the Interrogative in (matrix) CP. But in the ungrammatical (22b), the relative DP in Spec/ CP[Rel] is a closer c-commander to interrogative *kis-nee(j)* than the copy in matrix CP. This difference comes about crucially because the relative CP adjoins to TP, not the highest CP projection of matrix TP containing the correlate.

In Sanskrit, however, symmetric c-command is possible, and if so, then there should be no contrast between combinations with the interrogative outside the relative, with matrix scope, and

the interrogative within the relative clause with matrix scope. Examples are plentiful of correlative constructions with interrogatives in the correlate clause, not the relative (23a) There is an unusual single instance of an interrogative within a relative clause (23b):

23) [Sanskrit] Absence of Minimality contrast

a. Interrogative in main clause:

. **yás** tán ná véda *kím* ṛcā kariṣyati
 rel-nom that-acc not know-pres-3s what-acc verses-inst do-fut-3s
 [The one who does not know this] what will (he) do with the Verses?'
 R.V. 1.164.39c, Etter 1985, p. 167

b. Interrogative in relative clause

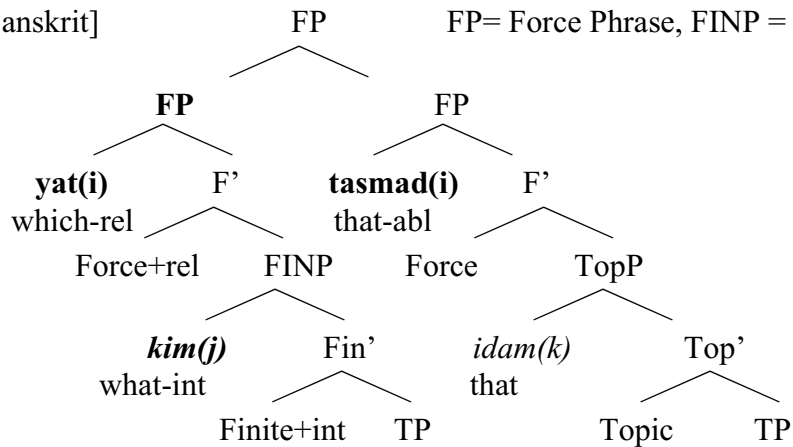
[**yát** *kím* ákaram] [**tásmād** idám āpā d(i)]
 rel what do-aor-1s that-abl this befall-aor-3s
 'Because I have done what? therefore this has happened.':
 '*What did for which reason I did __], for that reason this befell'
 (S.B. 4.1.5.4, Delbrück 1888, p. 550, Hettrich 1988, p. 139, Hock (1989, p. 7)

This sentence is a single instance from Vedic prose, for which there seems to be no alternative construal.² So I will concur with Hock 1989 in taking it as a rare but reliable indication of what is possible in early Sanskrit. Its translation is very hard to express in a modern language. There is a correlative construction, linking *yat* 'what-rel' in the relative clause with its correlate *tásmād* in the following clause. But in the middle of the relative clause appears an interrogative *kím* 'what-int', apparently with matrix scope, as no other interpretation is possible.

In order to represent the Minimality violation in within (23b), it is necessary to use a finer-grained clause projection than just CP. Following Rizzi (1997), CP is resolved into a Force projection, for the relative DP and a Finite projection for the interrogative (24). The Force projections are symmetrically adjoined in (25).

24) Minimality violation: [FP **yat(i)** [FinP *kím(j)* [TP **t(i)** (t(j)]]]

25) (=23b) [Sanskrit] FP FP= Force Phrase, FINP = Finite P



Sanskrit, which may be expressed as a correlative construction in which the relative precedes or follow the correlate clause. In fact restrictive and non-restrictive relatives in Sanskrit are formally quite similar, differing mainly in whether the correlate is a name or personal pronoun (appositive reading) or a common noun or demonstrative (restrictive reading). Both types of relative allow stacked relative clauses. In both types the modified element can occur in either the relative or the correlate clause (see Hettrich 1988 for extensive discussion of appositives and restrictive relatives).

28). [Sanskrit appositive clauses]

a. Left appositive relative clause

[**yó** gr̥ṇatām íd āsithā-
rel sing-part-gen.pl ptcl be-impf-middle-2s
āpír ūtī śíváh sákhā]
ally-nom favor-inst auspicious familiars
sá tvám ná indra mṛṣaya
ptcl you-nom Indra-voc be-gracious-caus-imper-2s

‘You who have become the good friend of the Singers with your favor to your familiars, be merciful to us, O Indra.’ RV 6.45.17, Hettrich 1988, p. 639

b. Right appositive relative clause

agním stuhi daivavā tam devaśravo
Agni-acc praise-imper-2s devevata-der. Devashravas-voc
yó jánānām ásad vaśí
rel people-gen.pl. attain-subj-3s subjection

‘Praise Agni(i) the one of Devavata, o Devashravas, who(i) should attain the subjection of the peoples.’

RV 3.23.3c, Hettrich 1988, p. 632

29) [Hindi-Urdu appositive clauses]

a. ***[joo(i) khaRii hai] anu(i) lambii hai**

rel standing is Anu tall is

‘Anu, who is standing, is tall.’ Dayal 1996, p. 155

b. ***anu(i) lambii hai [joo(i) khaRii hai]**

Anu tall is rel standing is

‘Anu, who is standing, is tall.’ (Ibid)

c. **anu(i) [joo(i) khaRii hai] lambii hai.**

Anu rel standing is tall is

‘Anu, who is standing, is tall. (Ibid)

In Hindi-Urdu, on the other hand, the appositive reading is allowed only for relative clauses adjoined to the right of DP (28)-(29)

This contrast indicates a difference between Hindi-Urdu and Sanskrit. In Sanskrit, the feature [Rel] alone marks all relative clauses, just indicating a syntactic anaphoric relation. This uninterpretable feature is matched by some phrasal category in the correlate clause.⁴ In Hindi-Urdu, the feature [Rel] is found on all relatives but in addition, restrictive relatives are marked with the feature [Pred], interpreted as set intersection of the CN and the predicate formed by the relative clause.(Dayal 1995, Grosu 2002). For that reason, the [Rel] feature must be matched by a correlate phrase of exactly the same category as the relative. Without the [Pred] feature, the appositive interpretation is required. In Hindi, only adjunction to DP is possible (29c)⁵.

There is evidence for the difference in feature specification of restrictive relatives in Sanskrit and Hindi-Urdu. The [Pred] feature is absent in Sanskrit. Its absence is crucial to the interrogative to relative shift noted above in embedded questions, where there is not modifier relation between the relative and some correlate. If the correlate clause has no exact match of a category modified by the relative clause, there is an alternative interpretation (30); the relative phrase is indefinite, and the relative clause is a conditional modifier of the whole correlate clause:

30) [Sanskrit] Relative with no correlate:

[**yó(i)** no agne duréva ā
rel-nom 1pl-acc Agni-voc having evil ways-nom to
márto(i) vadhāya dāśati]
mortal murder-abl hurt-pres-3s
tásmān(j) nah pāhy ámhasah(j)
that-abl 1pl-acc protect-imper-2s trouble-abl

[Which mortal with evil intentions hurts us with murder], protect us, Agni from this danger
[if a mortal with evil intentions hurts us with murder], protect us, Agni, from this danger.’
R.V. 6.16.31 Hettrich 1988, p. 620

31) [Hindi-Urdu] Relative with no correlate

* [jis laRkee-koo anu-nee wahaaN deekh-aa hai] maiN miinaa-see mil ga-ii
which girl-dat Anu-erg there see-pf is I Mina-with meet go-pf
‘[Which girl Anu has seen there], I met Mina.’

In Hindi-Urdu, a sentence of this type is ungrammatical, because no indefinite/conditional interpretation is possible (31). This restriction follows from the requirements of [Pred], which forces the correlate to be of the same category as the relative phrase, in this case DP.⁶ It also forces a closer syntactic relation between the relative and correlate clauses in Hindi-Urdu, as I will argue in the next section. The ‘search space’ for the matching correlate phrase is restricted by [Pred] to the TP which the relative CP asymmetrically c-commands.

4. Iteration of correlative clauses

The symmetric adjunction structure proposed for Sanskrit in (4) above is consistent with the anaphoric linking expressed by the feature [Rel], a linking more or less equivalent to discourse linking of clauses by coindexation of some common constituent. In principle, it should be possible for relative clauses in Sanskrit to iterate freely, and we will see that this is the case. But Hindi-Urdu places restrictions on iteration which follow from the c-command syntactic relation between the relative and correlate clauses.

4.1. The Simplicity requirement in Hindi-Urdu

In Hindi-Urdu, relative clauses do not freely iterate. I will propose that there is a general constraint on correlative clauses which has been observed for Hindi as well as other South Asian languages. Nadkarni (1970) showed contrasts between the participial relatives in the Dravidian language Kannada and the less usual correlative clauses in that language; the latter are structurally very similar to the Indic correlatives, though they are marked by interrogative morphology, and do not freely iterate. Dasgupta (1980) observed a similar contrast in Bangla relatives which he derived from a constraint called Simplicity. This constraint can be generalized to include the grammatical iterations Nadkanri observes in Kannada.. Independently, McCawley 1993/2004 observed that the same contrast holds in Hindi correlatives. I summarize the Simplicity constraint in Minimalist terms in (32):

32) The Simplicity requirement (Modifying Dasgupta (1980))

The features of a relative clause CP [Rel][Pred] must checked by a category in the TP sister of CP This category in TP must be projected from the same lexical category as the relative XP in CP[Rel].

As noted above, the CP-TP sister relation of asymmetric c-command follows from the presence of [Pred], which requires a XP correlate to be modified (restrictively) within some ‘local’ syntactic domain. In Sanskrit, the anaphoric link can be arbitrarily far away, as we will see below.

I will first show, using examples from McCawley 2004, that a contrast is found in Hindi-Urdu in iterated relatives modifying two different correlates. As the sentences are complex and not easy to process, I break them into clauses distinguished by roman numerals, and give a schematic summary of the coindexing relations after each example. The well-formed (33)-(34) contrasts with ill-formed (35)-(36):⁷

33) Simplicity is observed

[I] [*joo aadmii(i) caay pii rahaa hai*]
 which man tea drink prog is

[II][*maiN jis makaan(j) -meeN us-ke liyee(i) kaam kar rahaa huuNi*
 I which house-in 3s-for work do prog am

[III] [*raam pichlee saal wahaan(j) rah-taa thaa*]

Ram last year there stay-impf was

‘The man who is drinking tea, I’m doing work for him in the house [where Ram was living last year; Ram was living in the house where I am doing work for the man who is drinking tea.’ (McCawley 2004, p. 307; ? or ?? for some speakers)

- 34) a. [I] [joo aadmii(i)] [II] [us-ke liyee(i)
b. [II] [jis makaan(j)] [III] [wahaan(j)]

35) Simplicity is not observed.

* [I] [**joo aadmii(i)**] caay pii rahaa hai
rel man tea drink prog is

[II] [**jis makaan-meeN(j)**] maiN ab rah-taa huuN]
rel house-in I now stay-impf am

[III] [**woo(i)**] pichlee saal **wahaan(j)** rah-taa thaa]
3s last year there stay-impf was

‘The man who is drinking tea, he lived last year in the house where I am living now.’ (McCawley 2004, p. 307; * for all speakers)

- 36) a. *[I] [joo aadmii(i)] [III] [woo(i)]
b. [II] [jis makaan-meeN(j)] [III] wahaan(j)]

Where Simplicity is observed, each relative c-commands aTP containing a correlate XP. Where Simplicity is not observed, a relative in [I] corresponds to a correlate two clauses away in [III]

Vedic Sanskrit lacks the Simplicity condition, and as Hock (1989) shows, there is no contrast in iterated clauses. between (37)-(38), analogous to well-formed combinations in Hindi-Urdu, and (39)-(40), corresponding to the ungrammatical combination in Hindi-Urdu.

- 37) [I] **yo(i)** vai śreyasah pariveṣaṇam avavadati
rel-nom emph better-gen food-acc deprecate-pres-3s

[II] **yayā(k)** vai sa(j) **tam(i)** ārtiyā kāmayate
rel-inst emph he him affliction-inst afflict-pres-3s

[III] **tayā(k)** enam(i) ninayati
that-inst that-acc afflict-desid-pres-3s.

‘Who(i) deprecates the food of his(i) better(j), he(i) is afflicted by him(j) with whatever afflictions (k) he (j) wants to afflict him(i) with.’ (J.B. 3.303), Hock 1989:16).

- 38) a. [I] **yo(i)** II tam(i) [Simplicity is observed]
b. [II] **yayā(k)** [III] *tayā (k)*

- 39) [I] **yādy(i)** āhainam prāñcam ácaiṣīr
if-rel motive-less forward gather-aor-2s

[II] **yáthā(j)** párāca āsīnāyā pṛṣṭhato ‘nnādyam upahāret
 so-rel face-other-way sitting-dat back food-etc-acc bring-opt-3s
 [III] **tádṛk(j) tát(i)**
 that-like that/so

‘ If(i) you have gathered it forward, just as if(j) one were to bring food from the back to someone sitting on the other side, so(j) (would) that(i) be; If you piled the fire altar forward, that would be as if one were to bring food from the back to someone sitting (and looking away). S.B. 10.5.5.2, Hock 1989, p. 15.)

- 40) a. [I] **yády(i)** [III] **tát(i)** [Simplicity is not observed; [II] intervenes]
 b. [II] **yáthā(j)** [III] **tádṛk(j)**

4.2 Stacked relatives

Iterated relative clauses may modify the same correlate in Sanskrit, but not in Hindi-Urdu.

41) a. [Hindi] Stacked relatives on the left

* [joo laRkii(i) skuul-meeN mehnat kartii hai], [joo(i) anu-kii doost hai]\
 rel girl school-in effort do-impf is rel Anu-gen friend is
 woo(i) bahut acchii hai
 3s very good is
 ‘That girl is very nice, who works hard in school, who is a friend of Anu.’
 Grosu 2002

b. [Hindi] Stacked relatives on the right]⁸

* woo laRkii(i) bahut acchii hai, [joo(i) skuul-meeN mehnat kar-tii hai]
 that girl very good is who school-in effort do-impf is
 [joo(i) anu-kii doost hai]
 ‘That girl is very nice, who works hard in school, who is a friend of Anu.’

42) [Sanskrit] Stacked relatives on the left: yas(i) yas(i) ... sa(i) with verb gapping:

- a. [**yah(i)** sūryam **yah(i)** uṣāam jajāna
 rel-nom sun-acc rel-nom dawn-acc create-pf-3s
[yo(i) apām netā sa(i) janānsa indrah
 rel water-pl-gen leader-nom that-nom people-voc Indra-nom
 ‘Who-rel created the sun, who-rel created the dawn, who-rel is leader of the waters,
 that is Indra.’ R.V. 2, 12.7c, Hettrich 1988, p. 544.

That one is Indra, who made the sun, who made the dawn, who is the leader of the waters

- b. **yásyāvadhīt(i)** pitāram **yasya(i)** mātāram
 rel-gen kill-aor-3s father-acc rel-gen mother-acc
yasya(i) śśkró bhrātaram nāta iṣate
 rel-gen mighty-nom brother-acc not- go away-pres-3s
 ‘Whose-rel(i) father, whose-rel(i) mother, whose-rel(i) brother the Mighty one kills,

he(i) does not escape;

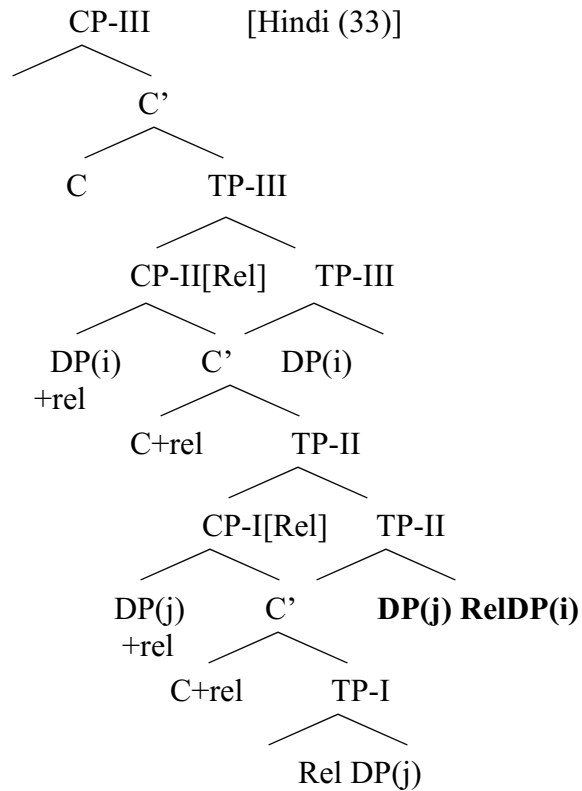
‘He does not escape, of whom the Mighty has killed the father, the mother, the brother.’ R.V. 5.34.4a, Hettrich 1988, p. 571.

4.3 Syntactic structures for iterated relatives

The symmetrically adjoined structure for Sanskrit is consistent with the absence of contrasts for iterated and stacked correlative clauses. For Hindi-Urdu, I derive the conditions on both iterated and stacked correlatives from the asymmetric adjunction structure governed by Simplicity. For example, iterated relatives have the structures in (43) and (44)

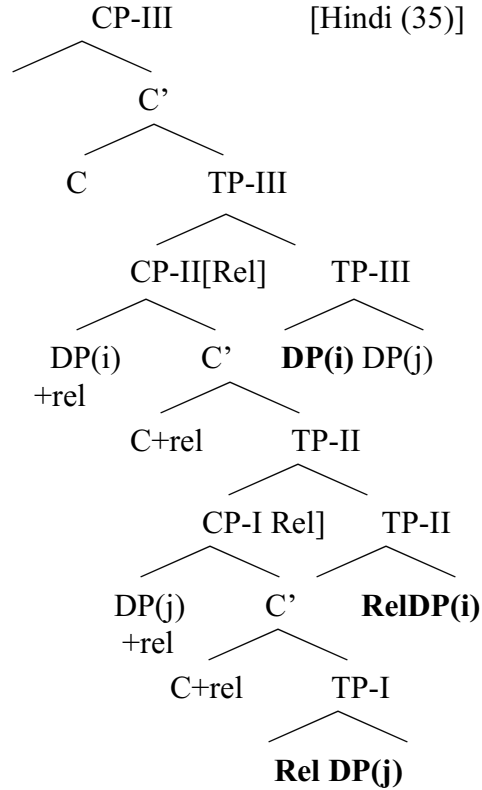
Contrasting structures for Hindi:]

43)



In this well-formed structure, CP-I c-commands TP-II, containing its correlate DP(j). TP-II introduces RelDP(i) and CP-II c-commands TP-III, which contains the correlate DP(i)

44) [C-command violation for CP-I]



In this ill-formed structure, TP-I contains the RelDP(j), but CP-I[Rel] does not c-command TP-II, which contains DP(j). Instead CP-I(j) c-commands TP-II which contains the relative head DP(i). CP-II(i) c-commands TP-III containing both the DP(i) and DP(j). So the problem with observing the Simplicity condition is that CP-I(j) does not c-command TP-III containing the correlate DP(j).

Additionally, CP-I(i) c-commands TP-II with the relative DP(j). Independently it has been shown that the correlate cannot be an interrogative XP as such, though the correlate may be a pronoun, acting as a variable, within an interrogative DP (Dayal 1995):

45) [Interrogative correlate]

[joo laRkee(i) khaRee haiN] *kaun(i)/ un(i) meeN-see kaun wahaaN rah-taa hai?
 rel boys standing are who? /3pl-in-from who? there stay-impf is
 ‘[Which boys(i) are standing there, who/ which of them lives there?’ (Dayal 1995, p. 182)

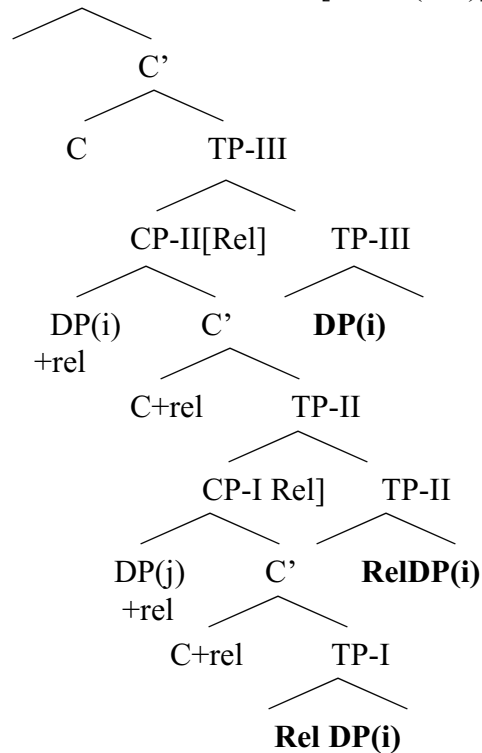
Interrogatives, like relatives, are operators binding a variable, and so they can't be bound as variables. Dayal We can extend this prohibition to relatives as well. - the correlate of Rel cannot itself be lexically Rel (or Int), which precludes a variable interpretation.

46) Feature checking condition:

[Rel] cannot be checked by a constituent which is an operator, only a phrase which is a variable at LF..

This condition also rules out stacked relatives (47), in which both correlatives have the same correlate. For this structure to be grammatical, a relative CP would have to have another relative as its correlate. The most deeply embedded relative CP in (47) does not c-command the TP containing the single correlate, even though the intermediate CP does c-command TP containing the correlate.

47)) [C-command violation for CP-I] CP-III [Hindi (41a)]



Assuming this adjunction structure for iterated relative clauses, the ungrammaticality of stacked relatives is explained in exactly the same way as the ungrammaticality of iterated relatives with non-local correlates. The explanation lies in the syntactic structure, which in turn is determined by the local feature-checking requirements of [Pred] for restrictive clauses, and the c-command requirement enforced in Hindi by this feature. Grosu 2002 explains the ungrammaticality of stacked relative clauses in terms of the feature MAX, which forms a unique individual once, but necessarily cannot do so twice for the same constituent. In his account, MAX must be associated with a correlative structure, by the nature of the place of correlatives within a scale of constructions measured by the contribution of information within the relative clause as opposed to information outside. [Footnote on problem of quantifiers, defeasibility of MAX?). The constraint on operators binding operators might sufficient to rule out the bad case of iterated relatives, but in my account this condition is a constraint within the overall feature-driven condition on which domains may contain the correlate of a relative.

There is another structure which would be plausible syntactically, where both CPI and CP-II are adjoined to TP-II. This structure is discussed in the Appendix.

4.6 Multiple relative clauses

As many have noted (Dayal 1995, McCawley 2004), etc.), relative clauses with multiple relative phrases are possible, provided that the relative CP c-commands the TP dominating the correlates:

r) I [**jis-jis sipaahii(i)** -kii **jis-jis caurahee(j)**-par Dyuutii hoo-tii hai]
rel-rel policeman-gen rel-rel intersection-on duty be-impf is

II [*woo(i)* *is(j)*-kaa zimmedaar hai]
3s-nom 3s-gen responsible is

‘The policeman(i) who is on duty at an intersection(j) is responsible for it(j)/ the intersection(j) where he(i) is on duty.’ This is the case in (r); see Dayal 1995 for discussion of how two relative phrases are matched with correlates.

The Simplicity/local c-command condition on relative clauses predicts that two finite clauses with ‘crossed’ relative-correlate dependencies will not be possible :

z) * I. [**joo paarTii (i)** *aisaa ummiidwaar(j)* DhunDh sak-eegii]
rel party such candidate search be-able-fut-3s

II. [**jis-kii(j)** (*useei*) waaqaai zaruurat hai]
rel-gen 3s-dat real need is

‘The party(i) which really needs him(j) will search for the candidate(j) which(j) it(j) needs.’

The first clause I is a relative clause whose correlate is in clause II. But clause II is also a relative clause whose correlate is in clause I. As a relative clause, clause I does asymmetrically c-command the clause containing its correlate. But as the c-commanded clause, the relative clause II does not asymmetrically c-command the clause containing its correlate. So sentences like (z) are structurally impossible.

The Simplicity condition in Hindi observed when multiple relative clauses are combined. For example, it is structurally possible to have relative clauses adjoined to both the left and right of a single clause in the middle containing both correlates.

y) I [**jis vidyaarthii(i)** -kee nambar sab-see acchee haiN]
rel student -gen grades all-than good are

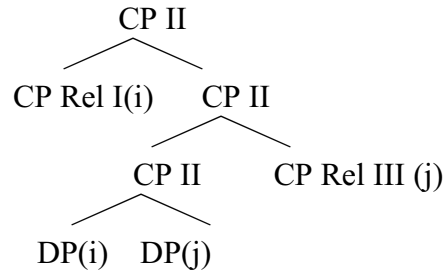
II [*usee(i)* *yah puraskaar(j)* mil-eegaa]
3s-dat that prize receive-fut

III [**jisee(j)** mukhya mantri vidyaalay-kee saalaana mahotsav-par inaaam dee-gaa]
rel-dat chief minister college-gen annual ceremony-on reward give-fut

‘The student(i) who(i) gets the best grades will receive the prize(j) which(j) the chief minister awards at the annual college ceremony.’

The relative clause I c-commands clause II, containing its correlate. But clause II contains the correlate of the relative in clause III. By Simplicity, therefore, clause III must asymmetrically c-command clause II, which contains its correlate. The structure must be as shown schematically in (w).

w) = (y)



The relative clause I c-commands a complex clause, in which its correlate is found, but not necessarily in the clause immediately c-commanded. This is actually generally true: the correlate must be found somewhere within the c-commanded clause, but not necessarily in the immediately c-commanded clause. The relative clause I c-commands clause II, which containing clause III in which the correlate occurs. This case differs crucially from the multiple stacking cases discussed earlier. There two relative precede a clause containing a single correlate. The second of the two relatives does not immediately c-command the clause containing the correlate. The Simplicity condition places a stronger condition on the relative clause than on the location of the correlate. The relative clause must immediately c-command a clause, but the correlate must just be somewhere within the c-commanded clause (or in some clause contained within it, though not within a syntactic island such as another relative clause).

q) I [sipaahii(i)-nee jis coor(j)-koo pakaRaa thaa]
policeman-erg rel thief-dat seize-pf was

II [us(i)-nee deekh-aa III [ki woo(j) bhaag rahaa thaa]]
3s-erg see-pf that 3s run-off prog was

‘The policeman saw [that the thief [he arrested] was running off].’

Unresolved questions: [How does the feature account predict the difference between the location of the relative and the correlate in finite clauses; no wide scope reading of relative, but the correlate may be in a non? Contrast: joo not in finite subordinate clause.

Conclusion.

A very long period of time separates Vedic Sanskrit and modern Hindi-Urdu. Yet both languages

make a distinction between relative and interrogative determiners in finite correlative clauses, which are not required to be adjoined to the correlate DP.. The constructions involving non-finite clauses are very similar, though not identical. There are similarities of case uses, though unlike Sanskrit, Hindi has dative and ergative subject constructions as well as dative objects. But the languages share enough common properties to make a close comparison of the differences in the form and constraints on finite clauses productive, and revealing of basic syntactic mechanisms of derivation and conditions of well-formedness.

Finite clauses are linked in fundamentally different ways in the two languages. As many have noted, the links between finite clauses in Sanskrit seem to be looser and more like discourse parataxis of clauses with equal status than combinations of matrix and subordinate clauses. Both correlative clauses and their 'main' clauses have the Vedic initial string of pronouns and particles. Finite CP is adjoined to CP, with symmetric c-command, Hock's (1989) 'conjoined' structure.. Finite clauses in Hindi-Urdu, by contrast, distinguish subordinate correlative clauses syntactically, by asymmetric adjunction of CP to TP, which then independently projects to CP, a generally accepted structure for Hindi-Urdu and other modern languages with correlatives (Dayal 1996, Grosu. 2002). This basic syntactic difference entails significant differences in what is syntactically well-formed and semantically interpretable in the two languages, as attested by the Vedic corpus and the judgements of speakers of Hindi and Urdu. Hindi-Urdu enforces locality conditions, ruling out question phrases within relative clauses, stacked relatives and non-locally coindexed iterating relative clauses, while the Vedic corpus contains examples of all these constructions. These differences follow from a checking requirement in Hindi-Urdu, a reworking of Dasgupta's Simplicity Condition (1980), which requires that a correlative clause be linked syntactically with a correlate in a locally c-commanded clause, that is, in TP to which CP is adjoined.

Features on the correlative clause and its correlate XP derive the syntactic difference of adjunction (Grosu 2002, Adger and Ramchand 2005). Sanskrit marks relative clauses of all types with the anaphoric feature [Rel], which allows a very general, perhaps non-local link between clauses by the operation of Agree. It marks restrictive clauses, appositive relative clauses, as well as conditional clauses and interrogative complements. [Rel] cannot be motivated as a semantic feature in Sanskrit because of the heterogeneous nature of the clauses which have relative determiners. Hindi-Urdu marks only relative clauses with [Rel] so it has become a semantically motivated feature. But HU also marks relatives with [Pred], which in conjunction with a link to the correlate XP, forms a predicate expression intersecting with the Common Noun denotation. Correlatives also have the feature MAX, creating a unique, definite individual, an interpretation which is found across languages which have correlative clauses. These features are active in the syntax, guiding the formation of a semantically interpreted structure at LF. Since Sanskrit has restrictive and definite interpretations for some correlatives, these same features must be options at LF. But they must not be required in the syntax, or Sanskrit would not have appositive correlatives, conditional indefinite clauses with relative form, or relative complements with interrogative interpretation.

The asymmetric c-command structure is required for checking [Pred] in the syntax. The

restrictive relative forms a predicate linked with a correlative in a determinate local domain, a requirement best satisfied by TP c-commanded by the correlative CP. This requirement, in effect Dugupta's Simplicity, unifies the definition of a large number of well- and ill-formed constructions in Hindi-Urdu, under a single explanation.

Appendix I Summary of rel, interrogative and correlative in Sanskrit and Hindi-Urdu.
Summary of general pattern. Examples

1) Hindi:

Relative	Interrogative	Proximal	Distal
joo 'who, what, which'	kaun 'who?' kyaa 'what?'	yah 'this', yee 'these'	woo 'that' vee 'those'
jahaaN 'where'	kahaaN 'where?'	yahaaN 'here'	wahaaN 'there'
jighar 'in which direction'	kidhar 'in which direction?'	idhar 'in this direction'	udhar 'in that direction'
jab 'when'	kab 'when?'	tab 'then'	
jaisaa 'of which kind'	kaisaa 'of which kind?'	aisaa 'of this kind'	vaisaa 'of that kind'
kyooN 'for which reason'	kyooN 'why? for what reason?'	tyooN 'in the same way/time'	
jitnaa 'how many'	kitnaa 'how many?'	itnaa 'this many'	utnaa 'that many'

2) Sanskrit

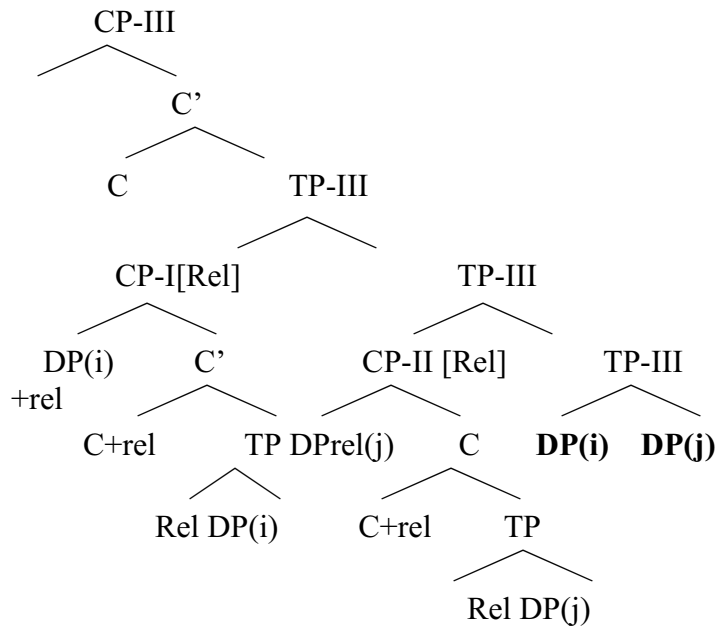
Relative	Interrogative	Demonstrative	Discourse deictic
yas, yad	kas, kim	enam, etad	sas, tat 'that'
yena	kena		tena
yasmāt	kasmāt		tasmāt
yavant			tavant
yatra	kvā		tatra
yadi 'if'			

yathā	kathā		tathā
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Appendix.II

There is another structure which would be plausible syntactically-- both CP* and CP# are adjoined to TP*. (43) represents the combination of iterating relative clauses which is ungrammatical in Hindi (32) vs (31). Structure (43) does not distinguish the good and bad cases where there are two correlates. . It also does not rule out stacked relatives with a single correlate.

42)



Assume bottom to top MERGE of CP adjuncts, and checking of the Rel anaphoric feature.

TP-III contains DP(i) and DP(j).

CP-II adjoins to TP-III which has the label TP-III.

CP-II[Rel] checks its anaphoric feature with DP(j); CP-II is spelled out

CP-I is adjoined to TP-III, which projects as TP-III

CP-I[Rel] checks its feature with DP(i)

(42) should be grammatical but is not. This structure does not capture the 'intervention' effect of CP-II

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1. For discussion of the nature of these corpora, and their credibility as sources of linguistic data reflecting the grammar of the earliest Sanskrit, see Jamison (1991).

2. There is another exotic relative construction noted by Delbrück 1888, p. 365, with a 3ppl imperative apparently within a relative clause. But there is an alternative construal which places the imperative outside of the relative clause (see Hettrich 1988, p.140, for a reanalysis and alternative translation of this sentence).

3. To phrase this violation in terms of illegitimate links across phase boundaries would require making all the projections within CP separate phases.

4. Since some of the loosely linked correlatives in Sanskrit do have a restrictive interpretation, I will assume that the feature [Pred] can be added after syntactic formation, affecting interpretation but not syntax. This addition is felicitous just in case the correlate is not a proper noun, pronoun or DP which already has a unique referent for discourse reasons.

5. In the absence of [Pred], the feature [Rel] must be checked by a c-commanding DP or other matching category, requiring appositive clauses to be adjoined to DP. I have no proposal for exactly how this requirement is derived.

6. Hindi-Urdu retains an anaphoric relation between the relative and correlate clauses, of the same type of anaphoric link found in ordinary discourse. Restrictive correlative clauses have a definite interpretation (Dayal 1995), at least as the default, which Grosu 2002 represents with the feature MAX. Definite relatives cannot be coindexed with certain (plural) quantifiers, instead requiring a partitive phrase with a coindexed pronoun (i). The same is true of sentences in discourse. (ii)-(iii).

i) [joo laRkiyaaN(i) khaRii haiN] *doo(i)/ un(i) -meeN-see doo lambii haiN
rel girls standing are two / 3pl-in -from two tall are

‘[Which girls are standing] two/ two of them are tall.’ Dayal 1995, p.161

ii).(a). shimlaa-meeN meerer **kaii sahayoogii** dakSiN bhaarat-kee thee.
Simla-in my few associate southern India -gen were

(b) **un-meeN-see eek-nee kah-aa thaa** [ki rah-nee-kee liyee kanaanor bahut acchii jagah hai

3pl-in-from one -erg say-pf was that stay-inf-for Kananor very good place is

‘(a) In Simla *a few of my associates(i)* were from South India. (a) One **of them(i)** said that Kananor is a very good place to stay.’ (Rakesh 1961: 10)

iii) . **vee laRkee** bahut caalaak haiN, **un-meeN -see** /*0 **har eek** meeraa chaatr hai
those boys very clever are 3pl-in-from each one my student is

‘Those boys are very clever, *each one of them* is my student.’

7. The contrast shown here is somewhat controversial, in that speakers sometimes find both versions quite odd and difficult to process. But the judgements reported here have been verified by a number of speakers of Hindi or Urdu, and I find Dasgupta’s independent findings for Bangla quite convincing.

Interestingly the ill-formed combination in (35) can be made much more acceptable by giving clause II, the intermediate clause, a separate intonation contour, which is lower in pitch than the two surrounding clauses. This prosodic difference in effect makes the intervening clause ‘disappear’ for coindexing purposes.

8. For some speakers the rightward iteration of relatives is acceptable. All stacked relatives are acceptable if there is an overt coordinating conjunction between them. Nadkarni (1970) derives (acceptable) stacked correlative in Kannada from a coordinate source, though the conjunction is not always overt. See Nadkarni 1970, pp. 102 ff. for discussion..