

*This volume is dedicated to Noam Chomsky on the occasion of  
his 80th birthday*

# Historical Syntax and Linguistic Theory

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Edited by

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## Middle Dutch:

Gysseling, M. (1977). *Corpus van middelnederlandse teksten (tot en met het jaar 1300). Reeks I: ambtelijke bescheiden*. Den Haag: Nijhoff.

## Early Modern Dutch (Corpus Dutch in Transition):

Bezemer, W. (ed.) (1892). *Oude rechtsbronnen der stad Breda*. Den Haag: Nijhoff.

Cerutti, F. F. X. (ed.) (1972). *Middeleeuwse rechtsbronnen van stad en heerlijkheid Breda, deel II: 1405 tot 1477*. Bussum: Kemink.

Joosting, J. G. C. (ed.) (1893). *Ordelen van den Etstoel van Drenthe 1518–1604*. Den Haag: Nijhoff.

Keverling Buisman, F. (ed.) (1987). *Ordelen van de Etstoel van Drenthe 1399–1447*. Zutphen: Walburg Pers.

— (ed.) (1994). *Ordelen van de Etstoel van Drenthe 1450–1504 [1518]*. Zutphen: Walburg Pers.

## Correlative clause features in Sanskrit and Hindi/Urdu\*

ALICE DAVISON

## 16.1 Introduction

Correlative clauses are found in various related and unrelated languages (Bhatt 2003). Correlative clauses are adjoined peripherally to a full clause (cf. Grosu 2002; den Dikken 2005), instead of to a sentence-internal NP. Here I contrast finite correlative clauses in the earliest Indic language which is attested, the Sanskrit of the Rg Veda and early Sanskrit prose, with corresponding subordinate clauses in a modern Indic language, Hindi/Urdu (HU). There is remarkable lexical continuity, in that the relative determiners are formally distinct from the interrogatives. Sanskrit has only one dependent clause type, the correlative construction, which corresponds to three kinds of subordinate clause in HU: correlative clauses, complement clauses, and conditional/adverbial clauses.

By many syntactic and semantic criteria, the correlative clauses in the two languages are sharply different. In Vedic Sanskrit, correlative clauses are loosely and paratactically related to another clause, while in HU, the relation between a correlative clause and the other 'host' clause is very closely constrained, and dependent clauses are syntactically different from main clauses.

This sequence of historical changes linking Vedic Sanskrit and the modern languages involves the grammaticization of a semantic predicational feature, so that what was a semantic default feature in Sanskrit becomes a lexical feature of relative Ds in HU, present throughout narrow syntax as well as at

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- e. Interrogative kva 'where?' kahaan 'where?'  
 f. Demonstrative tátra 'there' yahaaN/wahaaN 'here/there'

These distinctions allow us to distinguish clause types with some certainty (see 16.5).

### 16.3 Clause types in Sanskrit and HU

In (9a,b,c) are examples of three clause types in Vedic Sanskrit, corresponding to HU (10a,b,c).

#### (9) Vedic Sanskrit

##### a. [Relative]

[[yád im uśmási kár-tave] karat tát  
 what-REF he-ACC be-eager-PRES.IPL do-INF do-PRES.3SG that  
 '[What<sub>i</sub> we are eager for him to do t<sub>i</sub>], he does that.'  
 R.V. 10.74.6 (Hettrich 1988: 273)

##### b. [Interrogative]

kám ápo ádrim paridhím  
 INT-ACC waters-NOM cliff wall  
 rujanti [Discontinuous D...NP]  
 break-PRES.3PL  
 'Which cliff as wall do the waters break t?'  
 R.V. 4.146d (Etter 1985: 73)

##### c. [Dependent clause]

[tvám stośāma...] iti tvā agne  
 you-ACC praise-FUT.IPL QUOT you-ACC Agni-VOC  
 řsayah avocan  
 sages say-AOR.3PL  
 "'We shall praise you...'", the sages tell you, Agni.'  
 R.V. 10.115.8-9 (Hock 1982: 49)

#### (10) [HU]

##### a. [Relative]

[us-nee joo ciiz-eeN tooR-ii haiN] [[un-kii  
 3SG-ERG rel thing-PL break-PRF are 3PL-GEN  
 kiimat] [us-kii tankhvaah-see] zyaadaa hai]  
 price 3SG-GEN wages-from more is  
 '[Which things<sub>i</sub> he has broken t<sub>i</sub>] their<sub>i</sub> price is more  
 than his salary.' (Rakesh 161: 19)

##### b. [Interrogative]

aap [kisee sab-see accha ummiidwaar] samajh-tee I  
 you who-DAT all-than good candidate understand-IMPF 2  
 'Who<sub>i</sub> do you consider [t<sub>i</sub> the best candidate]?'  
 c. [Dependent clause]

maiN-nee sooc-aa [ki... panjim cal-aa jaa-uuNgaa]  
 I-ERG think-PRF that Panjim go-PRF go-FUT.1SG.M  
 'I thought [that... I would go on to Panjim].' (Rakesh 1962)

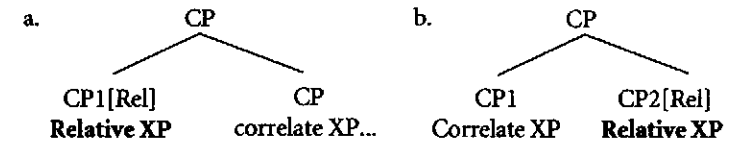
Relative clauses are marked by the Sanskrit *y-* series and its etymological descendant the HU *j-* series of determiners. Interrogative clauses are marked by the interrogative *k-* series in both languages. Sanskrit tends to place its determiners at the left periphery of the clause, while HU prefers interjectives *in situ*, and allows relatives to be either *in situ* or at the left periphery. In both languages, the clausal projection is marked with an uninterpretable feature [Rel], which is checked by the relative D either by movement or Agree (16.6).

HU has a specialized complementizer *ki* 'that' which marks both declarative and interrogative dependent clauses (1), (10c). Sanskrit has lexical marking specifically for subordination; the quotative *iti* (9c) marks 'thus' and has many other functions unrelated to clause subordination (Hock 1982).

### 16.4 Symmetric and asymmetric adjunction of correlative clause

Many have observed that finite clauses in Sanskrit are linked in a left-adjunctive way, without syntactic encoding of subordination (Delb 1888; Herman 1895; Gonda 1975; Hettrich 1988).<sup>1</sup> Hock (1989) expresses this relation as the adjunction of a full clausal projection to another full clausal projection (11).

#### (11) [Symmetric adjunction to another clause] (Hock 1989)

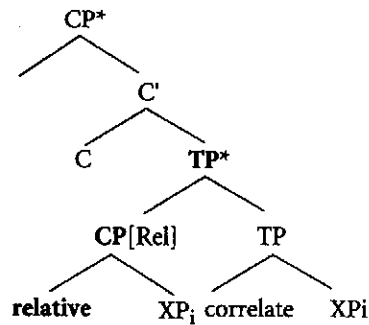


<sup>1</sup> Non-finite clauses in both Sanskrit and HU are syntactically subordinate. They are marked by infinitive or participle verbal inflection, in contrast to finite inflection for tense/aspect and person/number (9a).

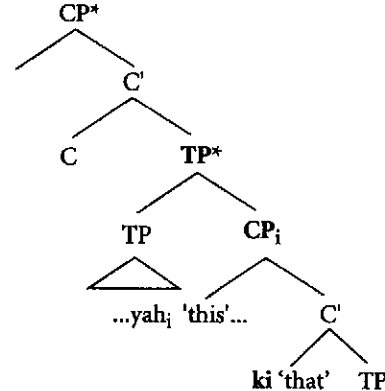
I propose an asymmetric adjunction structure for HU (9), in which the correlative CP is adjoined to TP, which then is the complement of its own CP\* projection. This is a base adjoined structure (cf. Dayal 1996; McCawley 2004).

## (12) [Asymmetric adjunction]

## a. Correlative clause



## b. Right-adjoined complement clauses



The asymmetric adjunction in (12) is an example of standard Chomsky adjunction, involving two distinct categories TP and CP. The 'host' clause TP projects as TP and then as CP\*.

The adjoined CP is encoded syntactically as subordinate, because its category does not project. It satisfies no argument requirement, so it must be a modifier (Chomsky 2004). The adjunction of CP to CP in (11) is problematic as a possible syntactic combination. Hock (1989) argues for (11) over a covert coordinate analysis. One of the CPs must project syntactically as CP, but there is no syntactic category difference to define which projects. The structure is saved from intolerable ambiguity, or simultaneous projection of both CPs, violating the Projection Principle. The presence of a relative D in one of the clauses lexically conveys semantic dependence, allowing the inference that the relative CP is not the one which projects.<sup>2</sup>

The argument for the difference of (11)–(12) has three parts: (a) syntactic properties of correlatives suggest that Sanskrit has no syntactic encoding of finite clause subordination, while HU does; (b) this lack of syntactic subordination is responsible for the range of correlative interpretations in Sanskrit which are not found in HU; (c) feature checking of correlative clauses in both languages differs

<sup>2</sup> In Vedic Sanskrit, the tone accent is found on verbs in relative and conditional clauses marked by clitic conjunctions. Elsewhere verbs are unaccented. (Macdonnell 1993: 467).

in one crucial respect in the two languages, reflecting the structural difference (11)–(12). I argue that this property leads to a much wider range of interpretations of correlative clauses in Sanskrit than in HU (16.5.3–5).

## 16.5 Contrasts in Sanskrit and HU correlatives

The difference in structures (11)–(12) is supported by syntactic evidence (16.5.1.2) and semantic evidence (16.5.3–5).

16.5.1 *Clause architecture: the Clause Initial String and markers of subordination*

A distinctive property of finite clauses is found in the oldest Indo-European languages, Sanskrit (Hock 1989; Schäufele 1990), Avestan, and Old Persian (Hale 1987). This is a string of head positions optionally occupied by particles and pronouns, which may fill up to five ordered positions in the periphery of the CP (13).

## (13) Vedic clause-initial string positions (Hock 1989: 115)

Nexus	1	2	3	4	5
conjunction	accented	unaccented	accented	enclitic	stressed
eg. <i>atha</i> 'so'	word	particle	particle	pronoun	pronomi
	[Rel, Int]				

In the string, relative and interrogative determiners may appear as *sin* words. They may be moved from their DP, leaving a remnant NP (Schäufele 1990) (15a,b). Other evidence that this clause-initial string involves projections comes from the nature of the particles, which are sentence- or discourse-oriented.

## (14) [Sanskrit] Sentence-oriented particles:

- a. Unaccented: *u* 'and'; *sma* 'always, indeed'; *ha* 'certainly'  
 b. Accented: *tú* 'then'; *vaí* 'truly, indeed, now, furthermore, sure'

The clause-initial string seems to be characteristic of an independent clause because it contains sentence-oriented particles. Yet the clause-initial string found not just in the independent 'correlate' clause (15a), but in the correlative clause as well (15b); see also (20), (27) below.

## (15) [Sanskrit] Clause-initial string with both adjoined clauses:

- a. [*yám*<sub>i</sub> *u* *ha* *evá* [*tát* *paśávo* *manusyēṣu*  
 REL-ACC PTCL PTCL PTCL that cattle-PL.NOM man-PL.LOC  
*yám*<sub>i</sub> *kámaṃ*<sub>i</sub> *árohaṃs*]]  
 REL-ACC desire-ACC obtain-3PL

- b. [tám<sub>i</sub> u ha evá [paśúṣu tám<sub>i</sub> kāmam<sub>i</sub>  
that-ACC PTCL PTCL PTCL cattle-PL.LOC that-ACC desire-ACC  
rohati]]  
obtain-PRES.3SG  
'The desire which<sub>i</sub> the cattle obtained among men, he obtains the  
same desire<sub>i</sub> among the cattle.' S.B. 2.1.2.7 (Hock 1989: 12).
- c. [tám<sub>i</sub> u ha evá [yám<sub>i</sub> (u ha evá) [tát paśávo  
kāmam<sub>i</sub> árohaṃs]] [paśúṣu tám<sub>i</sub> kāmam<sub>i</sub> rohati]]  
manuṣyēṣu yám<sub>i</sub>  
UNATTESTED

The presence of the clause-initial string in *both* clauses of (15) is explained if (15) is a sequence of two CPs, neither of which is syntactically subordinate. If the correlative clause (15a) were adjoined to TP, as in HU, then it should be internal to the host clause (15b), with the host CP projection preceding the relative, as in (15c). But this order appears not to be found.<sup>3</sup> In HU, however, it is normal for a complementizer *ki* 'that' to precede a correlative clause adjoined to TP, forming a complement CP (see (31b) below). There is no string of initial particles in HU. At most one clause-initial marker is allowed, like *ki* 'that'. D-movement is possible but unusual in relative clauses in Hindi-Urdu.<sup>4</sup>

### 16.5.2 Stacked relative clauses

Sanskrit allows stacked correlatives (16):

- (16) [Sanskrit] Stacked relatives on the left: yas<sub>i</sub> yas<sub>i</sub> ... sa<sub>i</sub> with verb gapping:

- a. [yáh<sub>i</sub> sūryam yáh<sub>i</sub> uśásam jajāna ]  
REL-NOM SUN-ACC REL-NOM dawn-ACC create-PRF.3SG  
[yó<sub>i</sub> apāṃ netā ] sá<sub>i</sub> janāsa  
REL water-GEN.PL leader-NOM that-NOM people-VOC  
índraḥ  
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: 544)

<sup>3</sup> This statement is subject to further search of the vast corpus of Vedic prose.

<sup>4</sup> D movement is possible in sentences such as (i):

- i) [joo tumheeN \_\_\_ kitaab caahiyee] woo meeree paas nahiiN hai  
REL YOU-DAT book need 3SG my near not is  
'I don't have the book which you need.' (Example due to an anonymous reviewer)

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

- b. yásyāvdhit<sub>i</sub> pitáram yáasya<sub>i</sub> mātáram  
REL-GEN kill-AOR.3SG father-ACC REL-GEN mother-ACC  
yáasya<sub>i</sub> śakró bhrátaram náta iṣate  
REL-GEN mighty-NOM brother-ACC not-away go-PRES.3SG  
'Whose<sub>i</sub> father, whose<sub>i</sub> mother, whose<sub>i</sub> brother the Mighty One kill he<sub>i</sub> does not escape'  
'He does not escape, of whom the Mighty has killed the father, tl mother, the brother.' R.V. 5.34.4a (Hettrich 1988: 57)

As with other correlative constructions in modern languages (Gros 2002; Den Dikken 2005), stacked restrictive relatives in HU are ungrammatical on the left of the main clause, and also on the right for some speakers (17).

- (17) a. [HU] Stacked relatives on the left  
\* [joo laRkii<sub>i</sub> skuul-meeN mehnat kartii hai], [joo<sub>i</sub>  
REL girl school-in effort do-IMPF is REL  
anu-kii doost hai] woo<sub>i</sub> bahut acchii hai  
Anu-GEN friend is 3SG very good-F is  
'That girl is very nice, who works hard in school, who is a friend o Anu.  
(Grosu 2002)
- b. [HU] Stacked relatives on the right  
% woo laRkii<sub>i</sub> bahut acchii hai, [joo<sub>i</sub> skuul-meeN  
that girl very good-F is REL school-in  
mehnata kar-tii hai] [joo<sub>i</sub> anu-kii doost hai  
effort do-IMPF is REL Anu-GEN friend is  
'That girl is very nice, who works hard in school, who is a friend o Anu.'

If CP adjoins to CP, and adjunction iterates, we expect free stacking in Sanskrit. Relative clauses are linked in discourse, rather than by syntactic subordination. HU adjunction of relative CP to TP is more constrained; see Davison (forthcoming) for a fuller discussion of the syntactic conditions on iteration of correlatives.

### 16.5.3 Relative clauses as interrogative complements

In both languages, interrogative sentences are marked by the *k-* series of determiners (8b,e). Yes/no questions are prefixed by 'what?'

- (18) [Sanskrit] Yes/no question  
 kád aryamṇó mahás pathá-áti kramema  
 what-INT Aryaman-GEN great-GEN road-INST surpass-OPT.1PL  
 dūḍhyo  
 inferior-PL.ACC  
 'Should we overcome the base people on the path of the great Arya-  
 man?'  
 R.V. I. 105.6cd (Etter 1985: 125)

- (19) [Sanskrit] Constituent question  
 kó dadarśa [prathamám jāyamānam]?  
 who-INT see-PRF.3SG first-M.ACC born-PTCP.M.ACC  
 'Who has seen [(him) as first born]?' R.V. I. 164. 4a (Etter 1985: 66)

If a question is in a semantically subcategorized complement clause, Vedic Sanskrit substitutes a relative *y-* determiner for the *k-* interrogative in both yes-no questions (20) and constituent questions (21):

- (20) [Sanskrit] Complement yes/no question  
 ná táśya vidma tád u śú prá  
 not this-GEN know-PRES.1PL this-ACC PTCL good forth  
 vocata [yúvā ha yád yuvatyaḥ  
 speak-IMP.2PL youth-NOM PTCL what-REL young-girl-GEN  
 kṣéti yóniṣu]  
 lie-PRES.3SG 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: 210)

- (21) [Sanskrit] Complement constituent question  
 nāhám tád bhagavan veda [yátra gamiṣyāmi]  
 not-I-NOM this Lord-VOC know-PRES.1SG where-REL go-FUT.1SG  
 'I do not know, O Lord, [where I will go]'  
 S.B. 14.6.11.1 (Hettrich 1989: 524)

- (22) [Sanskrit] Relative/interrogative ambiguity  
 nāhám táṃ veda [yá ití  
 not-I-NOM that-ACC.M.SG know-PRES.1SG REL-NOM.M.SG thus  
 brávyi]  
 speak-PRES.3SG  
 [Restrictive] I do not know [the one [who speaks thus]].  
 [Interrogative] I do not know [who speaks thus].  
 R.V. 10.27.3a (Hettrich 1988: 523)

This interrogative to relative shift is found in Homeric Greek (Chant 1958), and disappears in both Classical Greek and later Sanskrit. Nothing (20)–(21) is possible in HU (23).

- (23) ham-nee (yah) puuch-aa [ki kahaan/ \*jahaan ve  
 we-ERG this ask-PRF that where-INT/\*where-REL 3F  
 aa-eeNgee]  
 come-FUT.3PL.M  
 'We asked [where-int they will come].'

Sanskrit has several ways of marking sentential complements: simple parat of the complement clause, prefixation or suffixation of the quotative *iti* 'ti or else the interrogative complement is put in relative form, with an interrogative interpretation. The predicate selecting the complement determines whether it is an embedded question or not (Lahiri 2002). So Sanskrit expresses a semantic selection relation, but this selection relation can be expressed syntactically in Vedic Sanskrit only by the very general CP-CP adjunct sanctioned by the relative form of one of the clauses. HU has an available marker of subordination (*ki*) which marks interrogative as well as other complement types as syntactically distinct from main clauses (1c), (23).

#### 16.5.4 Relatives with conditional interpretation

In Sanskrit, correlative clauses without a correlate phrase are not uncommon (Hettrich 1988). The relative phrase gets an indefinite interpretation and the whole relative clause is translated as a conditional modifier of the correlate clause (24a). HU requires non-relative conditional clauses such (24b).

- (24) a. [Sanskrit] Relative with no correlate, indefinite conditional interpretation:  
 [yó me... yújyo vā sákhā vā  
 REL-NOM I-DAT ally-NOM OR friend-NOM OR  
 svápne bhayám... máhyam āha  
 dream-LOC frightful-ACC word-ACC speak-PRES.3SG  
 stenó vā yó dípsati ]  
 thief-NOM OR rel-NOM hurt-DESID.PRES.3SG  
 no... tásmād varuṇa páhy asmán  
 we-ACC that-ABL Varuṇa-VOC protect-IMP.2SG we-ACC  
 [If an ally or friend in a dream says terrible words to me, or if a thief wishes to hurt us] protect us, O Varuṇa, from that.  
 R.V. 2.28.10 (Gonda 1975: 196)

- b. [agar tum is kursii<sub>i</sub>-par aisee baiThoogee, (too)  
if you this chair-on so sit-FUT.2SG then  
woo<sub>i</sub> Tuut jaaeegii  
3SG break go-FUT.3SG.F  
[If you sit that way on this chair<sub>i</sub>] (then) it<sub>i</sub> will break.

Correlative clauses require a correlate phrase in HU. If there is no correlate, the sentence is always ill-formed (25). A non-restrictive meaning is unavailable.

- (25) [HU]  
\* [jis laRkee-koo anu-nee wahaan deekh-aa hai] maiN  
which girl-DAT Anu-ERG there see-PRF is I  
miinaa-see mil ga-ii  
Mina-with meet go-PRF  
[Which girl Anu has seen there], I met Mina.  
\* I met Mina, which girl Anu has seen there.

An indefinite interpretation is also unavailable (26).

- (26) [HU]  
\* [joo bijli-waala abhii aa-yaa hai] (is-liyee) ham  
REL electrician now-EMPH come-PRF is therefore we  
ghar-kee baahar jaa sak-eeNgee  
house-GEN outside go be-able-FUT.PL  
'If some electrician has already come, then we can go out of the house.'

### 16.5.5 Correlative clauses and the appositive interpretation

Correlative clauses in the modern languages which have them are typically on the left, non-stacking and restrictive, (Grosu 2002; Den Dikken 2005). But Sanskrit freely allows clauses on the left to modify proper names or pronouns appositively, (27a). The more expected restrictive modification of common nouns is also possible, as in the restrictive interpretation of (9), (15), (22).

- (27) [Sanskrit appositive clauses]  
a. Initial appositive relative clause  
[ yó gr̥natām íd āsitha-  
rel-NOM sing-PTCP.GEN.PL PTCL be-IMP.F.MIDDLE.2SG  
āpír ūtí śívāḥ sákhā ]  
ally-NOM favour-INST auspicious-INST familiar-NOM  
sá tvám ná indra mṛḷaya  
PTCL you-NOM we-DAT Indra-VOC be-gracious-CAUS.IMP.2SG

'O Indra, who has become the good friend of the Singers with your favour to your familiars, be merciful to us.'

RV 6.45.17 (Hettrich 1988: 6.

- b. Final appositive relative clause  
agním stuhi daivavātám devaśravo  
Agni-ACC praise-IMP.2SG daivevata-ACC Devashravas-VOC  
yó jánānām ásad vaśí  
REL-NOM people-GEN.PL attain-SBJV.2SG subjection-ACC  
'Praise Agni<sub>i</sub>; the one of Devavata, o Devashravas, who<sub>i</sub> should attain the subjection of the peoples.'

RV 3.23.3c (Hettrich 1988: 63.

HU does not allow appositive correlatives, (28a). The appositive reading allowed typically in relative clauses adjoined to the right of DP, (28c). Ho (1989) argues persuasively that internal, NP-adjoined subordinate relatives are not found in Sanskrit. The general absence of syntactically subordinate finite clauses would follow if finite CP may adjoin only to CP in Sanskrit, and never sentence-internally to NP, unlike HU, (28c), (34).

- (28) [HU]  
a. \* [joo<sub>i</sub> khaRii hai] anu<sub>i</sub> lambii hai  
REL standing-F is Anu tall-F is  
'Anu, who is standing, is tall.' (Dayal 1996: 155)  
b. % anu<sub>i</sub> lambii hai [joo<sub>i</sub> khaRii hai]  
Anu tall-F is REL standing-F is  
'Anu, who is standing, is tall.' (*ibid.*)  
c. anu<sub>i</sub> [joo<sub>i</sub> khaRii hai] lambii hai.  
Anu REL standing-F is tall-F is  
'Anu, who is standing, is tall.' (*ibid.*)

### 16.5.6 Summary of Sanskrit-HU differences.

Correlative clauses in Sanskrit and HU are formally similar, with a relative I linked to a correlate. There are striking syntactic and semantic differences however. Sanskrit allows a clause-initial string of heads and particles, found in both main and dependent clauses, while HU has a complementizer *ki* 'that' or a conjunction only in subordinate clauses. Sanskrit also allows iteration of relative clauses, HU allows only one relative to be associated with a correlate. Sanskrit correlatives have a wide range of interpretations: restrictive and appositive relative, interrogative, and conditional. The range of interpretation of subordinate clauses suggests that instead of encoding subordination

syntactically, Sanskrit uses the relative morphology on D to stand for semantic dependency. HU, however, allows only the restrictive interpretation for relatives, so that relative morphology is coextensive with syntactic subordination.

### 16.6 Feature checking and the sequence of derivation of correlative clauses

In this section, I outline the derivations in Sanskrit and HU, showing the similarities of feature checking and coindexing with a correlate, but with different semantic outcomes. Correlatives clauses have the same internal features in Sanskrit and HU. With the CP, the relative D(P) moves to a left-peripheral position. I follow Rizzi (1997) in taking this position to be within the Force projection. I assume that the head of Force ('C') has the uninterpretable feature [Rel]. It is like the [Rel] feature of Rizzi (1990) in motivating movement of a relative phrase or head, though it does not affect interpretation. In Sanskrit, this feature is (usually) strong, requiring D-movement; Sanskrit disallows phrasal movement within the clausal projections in the clausal-initial string (15). In HU, the feature may be strong, motivating XP-movement, or it may be checked by Agree, leaving the relative DP *in situ*.

The correlative D(P) is linked anaphorically to a correlate phrase, which is identified by a deictic/anaphoric determiner:

- (29) a. [Sanskrit]  
 (i) *sás* 'that', *tá* 'that'  
 (ii) *tátra* 'there' (etc.)  
 b. [Hindi/Urdu]  
 (i) *woo* 'that' (distal in contrast to deictic/proximal *yah* 'this')  
 (ii) *wahaaN* 'there' distal in contrast to deictic/proximal *yahaaN* 'here') (etc)

The coindexing with a correlate takes place within the adjunction structure created by merging relative CP with the host clause. Coindexing identifies the correlate to be modified by the correlative clause.

The interpretation of restrictive relatives is determined at LF by the semantic feature [PRED]. This feature affects semantic interpretation; it specifies a restrictive, intersective interpretation (Grosu 2002). It is the interpretative property of Rizzi's (1990) [Rel] feature, and equivalent to the [A] feature proposed for C in Scottish Gaelic and Irish by Adger and Ramchand (2005). It is a feature realization of Safir's (1986) R-binding relation between the restrictive relative clause and the nominal it modifies, in that a

relative clause is translated as a predicate which must be applied to an argument. So [PRED] is a semantic feature, unlike case or phi features in being valued by some corresponding other morphological feature.

It functions differently in HU and Sanskrit. In HU, it is like a lexical item, which may be present in the numeration. It depends on the presence of the feature [Rel] on the Force head, but as an option, in that appositives without [PRED] are also possible. In Sanskrit, it is an interpretative default. In the absence of any other lexical factors which determine the meaning of the relative clause, [PRED] is inserted to provide a well-formed interpretation.

The derivation starts with a numeration, including the following:

- (30) Numeration  
 a. Force is specified [uF:Rel]; if [PRED] is chosen, the [Rel] is also present (HU only)  
 b. HU: [PRED] is a distinct lexical property from [uF:Rel]  
 It can be present only if [uF:Rel] is present  
 c. Sanskrit: Only [uF:Rel] on Force; no other markers of Force are in the lexicon  
 d. Determiners with relative D have the feature [iF:Rel].

In the narrow syntax, Relative D(P) moves to Spec/Force within the CP projection, checking [uF:Rel]. The correlative CP is merged with the host clause (left adjoined in HU).<sup>5</sup> In HU, there is the normal kind of symmetric adjunction of relative CP to TP, with TP projecting. In Sanskrit, adjunction of CP to TP is blocked; the version of the parameter is that CP may not adjoin except to CP. If relative CP did adjoin to TP, it would intervene between the host TP and the heads of the CP projections where D is moved or particles are found (15c). This sequence seems not to be possible. At the interpretative interface, an anaphoric link is established between the correlative and the correlate. In HU, this link must be local, with no intervening clauses, because of the no-stacking constraint discussed earlier. In Sanskrit, there may be intervening clauses, allowing stacking (16); see Hock (1989) and Davison (forthcoming).

In HU, [PRED] has been present all through the derivation, and its presence requires a restrictive predicative interpretation of the clause modifying the correlate, blocking other clausal interpretations. These include the

<sup>5</sup> It is still not clear how left adjunction is associated with correlatives, but the position of correlatives is always on the left in modern languages (Grosu 2002; Den Dikken 2005). Sanskrit freely allows relatives of all types either to the left or right, with the tendency appositives to occur on the right (Hetzrich 1988).

appositive, interrogative, and conditional interpretations found in Sanskrit. In Sanskrit, these interpretations follow from the presence of other lexical information. If the correlate is a proper name or pronoun, the interpretation cannot be restrictive and intersective, so it must be appositive. If the main verb semantically selects an interrogative complement, the relative interpretation may be interrogative. If no correlate with reference to an individual is present, then the relative clause has a conditional interpretation. If none of these factors is already present, then the insertion of [PRED] rescues the complex sentence by providing a well-formed interpretation. In HU, all interpretations except restrictive are ruled out by the presence of [PRED] in the narrow syntax.

### 16.7 Syntactic change

In 16.5.6, I have contrasted syntactic and semantic differences of correlative clauses in Vedic Sanskrit and in a modern Indic language derived from it at least in an indirect way. I have focused on two differences, in the adjunction structure for correlatives, and the role of the semantic feature [PRED], which I believe to be related. Here I will propose a series of changes which would have to take place to create the modern formal features of correlative clauses in HU from an older spoken language now indirectly represented only by the literary language of the Sanskrit corpus. This proposal is necessarily speculative, as there is little real evidence of change from the Old Indic constructions until the period in the sixteenth to eighteenth centuries in which the modern form of HU emerged (Masica 1991: 50–5; Snell 1991). Classical Sanskrit preserves most of the properties of correlative and other subordinate constructions found in Vedic. Pali may reflect the phonological and morphological changes of Middle Indic but its syntax is little different from Sanskrit (S. Jamison, p.c.). Pali retains clitic particles like those in (14) as well as the quotative *iti* (Gair and Karunatillake 1991). As classical Sanskrit continued to be used as a literary language for many centuries, and there are no known texts surviving from the intermediate period between Middle Indic and the early modern language, it is very hard to define a chronology before the seventeenth century (Snell 1991).

#### 16.7.1 Syntactic subordination

One of the earliest modern texts from a variety of Hindi, Braj Bhasha, shows two changes. One is that a relative form *joo* is used as a complementizer introducing a complement clause.

- (31) [Braj, 17th century or earlier]  
 soo taanseen-neeN kahi [joo [jin-neeN yah kiirtan  
 this Tansen-ERG say-PRF that REL-ERG this hymn  
 kiyau hai,] soo braj-meeN rahta hai].  
 do-PRF is that Braj-in stay-IMPF is  
 ‘Tansen said [that the one [who made this hymn of praise] lives in Braj].’  
 (Snell 1991: 71.)

The other change is that a relative clause (also marked by a relative form) follows the complementizer. This is evidence that the relative clause is adjoined to TP, lower than C (Force). I take this example to mean that Braj Bhasha of this period had syntactic subordination, with the relative *joo* reanalysed as a lexical non-relative complementizer (cf. Roberts and Roussou 2003). This trend continues with the borrowing of Persian *ke/ki* as a lexical complementizer (12b, 32).<sup>6</sup>

- (32) [Braj Bhasha, early 19th century]  
 puni rakhvaaree-neeN jaanyau [ki yah tau gadahaa  
 still watchman-ERG know-PRF that this TOP donkey  
 hai par baagh-kau caam oorhi aayau hai].  
 is but tiger-GEN hide WTAP-PRF come-PRF is  
 ‘Still the watchman knew [that this was a donkey but it was covered  
 with a tiger skin].’  
 (Snell 1992: 65.)

The Persian *agar* ‘if’ is borrowed as a conditional conjunction (24b), though the relative continued to be used as a conditional without a correlate:

- (33) [Early 20th century Hindi]  
 [joo aveeN] too tab maluum hoogii  
 REL COME-SBJV.3PL SO then known be-FUT.3SG  
 ‘[If they should come] then it will be known.’ (Greaves 1921: 185)

Even more unambiguous evidence for syntactic subordination is found when relative clauses are adjoined to NP within a matrix clause. This construction is influenced by Persian, and like *ki* ‘that’ is found in HU and other languages which were within the area ruled by the Moghul empire (Marlow 1997). In the late nineteenth-century dialects of Hindi reported in

<sup>6</sup> Many Indic languages retain a relative form as complementizer. Bangla is one, marking complements with *je* ‘which’. If *je* retained its relative character, it would not be able to combine with an interrogative complement clause, but these combinations are allowed under some circumstances. Genuine correlative clauses may not have an internal interrogative (Probal Dasgupta, p.c.).

Grierson (1967–8), internal relatives are found, with either restrictive and non-restrictive meaning, as in the current language.

- (34) [aap-kee yah beeTaa [joo paturiyaaN-kee sang aap-kee  
 YOU-GEN this son REL prostitutes-GEN with YOU-GEN  
 dhan-koo khaa ga-yaa hai]] ...  
 wealth-DAT eat GO-PRF is  
 'This son of yours [who ate up your wealth with prostitutes] ...'  
 (Grierson 1967–8: vol. 9.1, 96)

The earlier texts in Snell (1991) show no sentence-internal relatives, though right-adjoined relatives have appositive meaning.

In sum, the texts going back approximately to the seventeenth century show modern Indic features: lexical complementizers and conditional conjunctions, borrowed from Persian, relative clauses adjoined to TP, following the complementizer, and NP-internal relative clauses, all indicating syntactic subordination. At the same time, subordinate clauses are semantically distinct. Complements are marked by the *ki* prefix, conditionals are introduced by non-relative conjunctions, and left-adjoined correlatives are only restrictive. NP adjunction and right adjunction of CP allow both restrictive and non-restrictive meaning.

### 16.7.2 Syntactic change

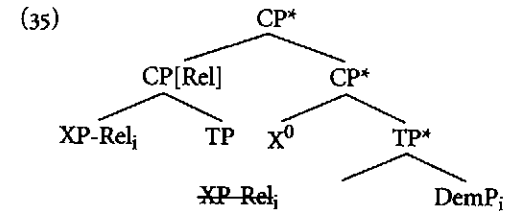
In the analysis I have given in the preceding sections, there are two areas of contrast between Sanskrit and HU. One is the syntactic adjunction relation between the relative CP and its host clause. The other is the role of [PRED] as a feature of clauses with the feature [Rel]. I propose that these two factors are related.

Sanskrit had no way of indicating syntactic subordination of finite clauses. Finite clauses are linked with clitic conjunctions and discourse particles. Complements are normally adjoined paratactically, with or without the quotative *iti*; interrogative complements may be expressed by relative clauses.<sup>7</sup> Conditional clauses are expressed with clitics, relative conjunctions or the relatives without correlates. The conclusion I draw is that in addition to simple parataxis, the relative construction is used as a general way of linking finite clauses. The relative D sets up an interpretative dependency with a constituent of the host clause.

The syntax of the relative construction in Vedic underspecifies the range of possible interpretations. I have represented the syntactic underspecification as

<sup>7</sup> I leave open here how to represent parataxis and linking of clauses by clitics.

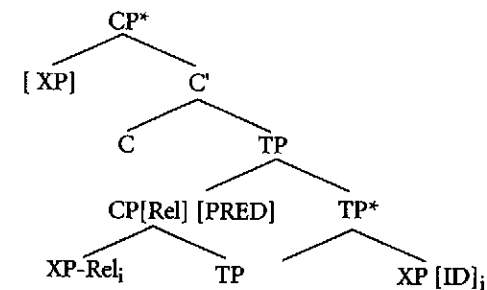
CP to CP adjunction (35). The relative marking of one CP indicates lexical that its CP is semantically dependent; the verb accent also signals dependence (see note 2). Hence the non-relative CP\* in (35) is the one which projects (16)



I have proposed that relative CP does not adjoin TP in Sanskrit. The reason for this could lie in the composition of the CP projection in early Sanskrit. On the evidence of the clause-initial string (13)–(15), the CP projection consists of one or more head positions which can be filled only by words, not phrases (X<sup>0</sup> stand for a series of heads such as Force, Focus, Topic and Finite (Rizzi 1997). These head positions are occupied by participle or D heads copied from positions in TP and TP\*, and merged into the head positions. If so, then we may suppose that the movement chains formed by CP\* cannot be interrupted by adjunction of a full CP to TP\*, (15c).

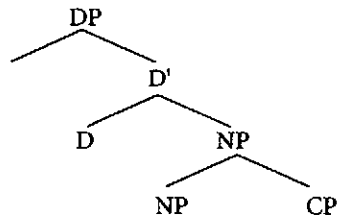
This condition would have to be lost to open the way for reanalysis of CP as a series of functional projections allowing phrasal movement and phrasal adjunction, creating the structure in (36), where CP stands for the clause projections of Rizzi (1997).

### (36) Asymmetric adjunction [HU]



This is the structure which seems to surface in Hindi texts in Snell (1991) from the seventeenth century onwards. It is general; CP can be adjoined to the right of TP as a complement. Appositive relative clauses tend at this stage to occur as right-adjoined relatives. A later change influenced by Persian syntax allows subordinate adjunction to NP, (37):

(37) NP adjunction [late 18th-century/19th-century Hindi]



The CP can be a restrictive or non-restrictive relative marked with the relative D, or a complement of N with the complementizer *ki*. CP adjunction to both TP and NP is productive in the modern language.

If syntactic subordination is possible, there is no need to keep the relative clause itself underspecified for meaning. The relative *joo* on complements is reanalysed as a (Force) complementizer marking subordination (31), later replaced by *ki*. Relative phrases in conditional clauses are reanalysed as conjunctions. Relative-marked determiners can be marked at the outset of the derivation by [PRED]. What was a default semantic feature seems to be reanalysed as a lexical item in the numeration which can be attached to a clausal head marked [uF:Rel].

### 16.8 Summary and conclusion

The Old Indic correlative construction appears to have undergone two kinds of change. One is the change in nature of the feature [PRED] from a semantic feature to a lexical feature on relative D which is present in syntax. This change caused the correlative CP construction, especially those adjoined to the left, to take on exclusively restrictive relative function, with the restrictions in interpretation found in modern HU and other modern Indic languages. The other was the evolution of a complementizer form specialized for indicating subordination. This split of functions is reflected in the order of adjunction. Left-adjoined relative clauses are typically relatives, while finite complement clauses are typically right-adjoined. This change was correlated with the reanalysis of correlative clauses as adjuncts to TP rather than to CP.

The CP structure of Vedic Sanskrit evolves to remove the condition on functional projections that they may be filled only with heads, allowing the relative CP as a phrasal projection to adjoin to TP in the later language. This change introduces syntactic encoding of subordination, which might be regarded as a more economical way of expressing semantic relations than in the paratactic, anaphoric Sanskrit syntax. Evidence for subordination in

early modern Hindi is found when the relative *joo* is used as a complementizer distinct from a relative DP; a determiner is reanalysed as a functional category head (Roberts and Rousou 2003).

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