

## 1 Uniqueness in Correlatives and QVE Effects

Correlative Clauses involves uniqueness (cf. Srivastav (1991), Dayal (1995), Dayal (1996)).

- (1) [jo larkii kharīi hai] [vo lambii hai]  
Rel girl.f standing.f be.Prs.Sg Dem tall.f be.Prs.Sg  
'The girl who is standing is tall.'

However, correlatives also display Quantificational Variability Effects (QVE) (cf. Lewis (1975)).

- (2) a. A bear is always/often/rarely/never blue-eyed.  
b. All/most/few/no bears are blue-eyed.
- (3) (from Dayal (1995))

[jo lar̥kiyā: mehnat kar-tii hĒ] [vo aksar safal ho-tii hĒ]  
Rel girls.f hardwork do-Hab.f be.Prs.Pl Dem often successful be-Hab.f be.Prs.Pl

QV-Reading: Most girls who work hard are successful.  
Non-QV-Reading: Girls who work hard succeed often.

### 1.1 The interpretation of Plurality in Correlatives

Plural correlatives seem to involve a universal reading.

- (4) (from Dayal (1995))
- a. Singular:  
[jo lar̥kii kharīi hai] [vo lambii hai]  
Rel girl.f standing.f be.Prs.Sg Dem tall.f be.Prs.Sg  
'The girl who is standing is tall.'
- b. Plural:  
[jo lar̥kiyā: kharīi hĒ] [ve lambii hĒ]  
Rel girls.f standing.f be.Prs.Pl Dem.Pl tall.f be.Prs.Pl  
'All the standing girls are tall.'/'The girls who are standing are tall.'

A Link-style semantics for plurals seems to make the right predictions. Plural correlative pick out the relevant maximal plural entity.

The universal reading disappears if the main clause predicate is collective.

- (5) Collective Predicate

[jo lar̥kiyā: kharīi hĒ] [ve behane hĒ]  
Rel girls.f standing.f be.Prs.Pl Dem.Pl sisters be.Prs.Pl

'The girls who are standing are sisters.'

### 1.2 QVE Effects in Correlatives

Both plural and singular correlatives permit QVE effects.

- (6) (from Dayal (1995))

a. Plural:

[jo lar̥kiyā: mehnat kar-tii hĒ] [ve aksar safal ho-tii hĒ]  
Rel girls hardwork do-Hab.f be.Prs.Pl Dem.Pl often successful be-Hab.f  
hĒ]  
be.Prs.Pl

QV-Reading: Most girls who work hard are successful.  
Non-QV-Reading: Girls who work hard succeed often.

b. Singular:

[jo lar̥kii mehnat kar-tii hai] [vo aksar safal ho-tii hĒ]  
Rel girl hardwork do-Hab.f be.Prs.Sg Dem often successful be-Hab.f  
hai]  
be.Prs.Sg

QV-Reading: Most girls who work hard are successful.  
Non-QV-Reading: The girl who works hard is often successful.

QVE effects also surface in multiple correlatives.

- (7) (from Dayal (1995))

[jo lar̥kii jis lar̥ke-ko sab-se pahle dekh-tii hai], [vo aksar  
Rel girl Rel.Obl boy.Obl-Acc all-of first see-Hab.f be.Prs.Sg Dem often  
us-hii-ko pasand kar-tii hai]  
Dem-Emph-Acc like do-Hab.f be.Prs.Sg

'MOST<sub>x,y</sub> [girl x played with boy y] [x defeated y].'

### 1.3 The Role of Aspect in Licensing QVE

QVE is only licensed in generic tenses (cf. 6, 7).

If we switch to an episodic tense, the QVE reading is lost.

(8) Episodic Tense (Perfective)

a. Plural:

[jin lar̥kiyō-ne mehnat ki-i] [ve aksar safal hu-i]  
 Rel.Pl.Obl girls.Obl-Erg hardwork.f do-Pfv.f Dem.Pl often successful be-Pfv.f

Non-QV-Reading: The girls who worked hard were successful often.

\*QV-Reading: Most girls who work hard are successful.

b. Singular:

[jis lar̥kii-ne mehnat ki-i] [vo aksar safal hu-i]  
 Rel.Obl girl-Erg hardwork.f do-Pfv.f Dem often successful be-Pfv.f

Non-QV-Reading: The girl who worked hard was often successful.

\*QV-Reading: Most girls who worked hard were successful.

This is also the case with multi-headed correlatives.

(9) (from Dayal (1995))

[jis lar̥kii-ne jis lar̥ke-ke-saath khel-aa] [us-ne us-ko aksar  
 Rel.Obl girl-Erg Rel.Obl boy-with play-Pfv Dem-Erg Dem-Acc often  
 haraa-yaa]  
 defeat-Pfv

Non-QV-Reading:  $\forall x, y$  [girl  $x$  played with boy  $y$ ] [OFTEN [ $x$  defeated  $y$ ]].

\*QV-Reading: MOST  $x, y$  [girl  $x$  played with boy  $y$ ] [ $x$  defeated  $y$ ].

- Genericity makes available multiple situations over which *often* can then quantify.
- Presumably, in these situations maximality/uniqueness is satisfied.

### 1.4 -ever in Correlatives

Correlative clauses differ from embedded and extraposed relative clauses in allowing for *-bhii* 'ever'.

(10) (from Verma (1971):119)

a. Correlative:

[jo bhii kitaabē mere-paas thī:] [vo kho gayī:]  
 Rel ever books I.Gen-near be.Pst.FPI Dem

'Whatever books I had, they got lost.'

b. Embedded Relative Clause:

\*vo kitaabē [jo bhii mere-paas thī:] kho gayī:  
 Dem books Rel ever I.Gen-near be.Pst.FPI lost GO.Pfv.FPI

c. Extraposed Relative Clause:

\*vo kitaabē kho gayī: [jo bhii mere-paas thī:]  
 Dem books lost GO.Pfv.FPI Rel ever I.Gen-near be.Pst.FPI

Two interpretations for *-bhii* 'ever':

(11) (from Dayal (1995))

a. Identity (← 'epistemic' *be*)

[jo bhii lar̥kii is patrikaa-kii sampaadikaa hai] [use  
 Rel ever girl Dem.Obl magazine-Gen.f editor be.Prs.Sg Dem.Dat  
 inaa mil-te hĒ]  
 prize get-Hab.Pl be.Prs.Pl

'The girl who is the editor of this magazine, whoever she may be, gets prizes.'

b. Free Choice: (← generic *be*)

[jo bhii lar̥kii is patrikaa-kii sampaadikaa ho-tii hai]  
 Rel ever girl Dem.Obl magazine-Gen.f editor be-Hab.f be.Prs.Sg  
 [use inaa mil-te hĒ]  
 Dem.Dat prize get-Hab.Pl be.Prs.Pl

'Any girl who is the editor of this magazine, whoever she may be, gets prizes.'

Identity Reading: non-generic tense

Free Choice Reading: generic tense

## 2 The Interpretation of Multi-Headed Correlatives

### 2.1 Semantic Issues

Attempt 1: Universal Quantification (cf. Andrews (1985)).

(12) (from Dayal (1996):197)

[jis lar̥kii-ne jis lar̥ke-ke-saath khel-aa] [us-ne us-ko haraa-yaa]  
 Rel.Obl girl-Erg Rel.Obl boy-with play-Pfv Dem-Erg Dem-Acc defeat-Pfv

$\forall x, y$  [girl  $x$  played with boy  $y$ ] [ $x$  defeated  $y$ ].

Problems with Attempt 1:

- Why is universal quantification not available with simple correlatives?
- (12) seems to involve something like a bijection between the set of girls and boys.

Attempt 2: Dayal (1995) suggests that if we bring in Maximalization, we can freely allow for universal quantification, and also capture the bijection requirement.

- (13) a. Semantics for (12):  
 $\forall x, y [\lambda x = \iota \lambda z [\text{girl}(z) \wedge \text{boy}(y) \wedge \text{played-with}(z,y)] \wedge y = \iota \lambda z [\text{girl}(x) \wedge \text{boy}(z) \wedge \text{played-with}(x,z)] \rightarrow \text{defeated}(x,y)]$
- b. Semantics for 'Which girl is standing, she is tall':  
 $\forall x [\lambda x = \iota \lambda z [\text{girl}(z) \wedge \text{standing}(z)] \rightarrow \text{tall}(x)]$

Problems with Attempt 2:

The semantics are still not quite right.

- Not all the boys have to be played with.
- More than one girl can play with a particular boy.

- (14) (from Dayal (1996):199)
- [jis larke-ne jo kitaab parh-ii] [us-ne us-par lekh likh-aa]  
 Rel boy-Erg Rel book write-Pfv.f Dem-Erg Dem-on essay write-Pfv

'Which boy read which book, he wrote an essay on it.'

Compatible with more than one boy reading the same book.

→ There is a function from girls to boys - it can be one-one or many-one, into or onto.

Attempt 3: The correlative clause in a Multi-Headed Correlative denotes a function.

- (15) [Which girl played with which boy], [she defeated him].
- a. Denotation of '[which girl played with which boy]':  
 $\lambda R \exists f' [f' = \iota f [\text{Dom}(f) = \text{Girl} \wedge \text{Range}(f) \subseteq \text{Boy} \wedge \forall y \in \text{Girl} [\text{play}(y, f'(y)) \wedge \forall y \in \text{Girl} [R(y, f'(y))]]]$
- b. Denotation of '[she defeated him]':  
 $\lambda x \lambda y. [\text{defeated}(y, x)]$
- (from Dayal (1996):207)

Simple Correlatives should ideally follow as a special case:

- (16) [Which girl is standing], [she is tall].
- a. Denotation of '[which girl is standing]':  
 $\lambda R. [R(\iota x [\text{girl}(x) \wedge \text{standing}(x)])]$   
 (\* unfortunately, this is not a straightforward reduction of 15.)
- b. Denotation of '[she is tall]':  
 $\lambda x. [\text{tall}(x)]$

## 2.2 'Matching' Requirement on Multi-Headed Correlatives

The number of Rel Phrases in a correlative clause must equal the number of Dem Phrases in the main clause.

- (17) (from Dayal (1996):198)
- a. Mismatched Multi-Head Correlative:  
 \*[jo larkii jis larke-ke-saath khel-egii] [vo jiiit jaa-egii]  
 Rel girl Rel boy-with play-Fut.FSg Dem win GO-Fut.FSg  
 '\*\*Which girl plays with which boy, she will win.'
- b. Conditional, no matching requirement:  
 [agar koi larkii kisii larke-ke-saath khel-egii]-to [vo jiiit  
 if some girl some boy-with play-Fut.FSg-then/Top Dem win  
 jaa-egii]  
 GO-Fut.FSg  
 'If a girl plays with a boy, she will win.'

The 'matching' requirement follows from the semantics proposed in (15).

## 2.3 Single Case Correlatives: Exceptions to 'matching'

McCawley (2003) notes that certain multi-headed correlatives do not obey the 'matching' requirement.

- (18) (from McCawley (1992)/McCawley (2003))
- [jo larkii jis larke-se baat kar rahii hai] [ve ek-saath sinemaa  
 Rel girl Rel boy-with talk do Prog.f be.Prs.Sg Dem.Pl together cinema  
 jaa-êge]  
 go-Fut.MPl  
 'Which girl is talking to which boy, they will go to the cinema together.'

- 2 Rel Phrases, but only one Dem Phrase.

- The two Rel Phrases together must form a split antecedent for the Dem Phrase.

(19) \*[jo laṛkii jis laṛke-se baat kar rahii hai] [vo sinemaa jaa-egii]  
 Rel girl Rel boy-with talk do Prog.f be.Prs.Sg Dem cinema go-Fut.FSg  
 'Which girl is talking to which boy, she will go to the cinema.'

- There may also be a single Rel Phrase and two Dem Phrases.

(20) [jo dono vahā: khare hē] [vo laṛkaa us laṛkii-ko pasand kar-taa  
 Rel both there standing.MPl be.Prs.Pl Dem boy Dem girl-Acc like do-Hab  
 hai]  
 be.Prs.Sg  
 'Which two are standing there, that boy likes that girl.'

- However, such 'non-matching' multi-headed correlatives can only be interpreted as single-case correlatives.

- (21) a. Non-Matching, Single Case, \*Multiple Case  
 [jo laṛkii jis laṛke-se baat kar rahii hai] [ve ek-saath sinemaa  
 Rel girl Rel boy-with talk do Prog.f be.Prs.Sg Dem.Pl together cinema  
 jaa-ēge]  
 go-Fut.MPl  
 'Which girl is talking to which boy, they will go to the cinema together.'  
 (One girl is talking to one boy. They will go to the cinema together. No quantification over pairs.)
- b. Matching, Multiple Case, Single Case  
 [jo laṛkii jis laṛke-se baat kar rahii hai] [vo use pasand  
 Rel girl Rel boy-with talk do Prog.f be.Prs.Sg Dem Dem-Acc like  
 kar-tii hai]  
 do-Hab.f be.Prs.Sg  
 'Which girl is talking to which boy, she likes him.'  
 (The quantification over pairs reading is available.)

Bittner (2001) handles these cases in terms of conditions on Topic structures.

- Why can't non-matching correlatives receive multi-case interpretations?

Explanation in the form of Dayal (1996)'s semantics for (multi-case) multi-headed correlatives.

Assumption: different semantic mechanisms for the interpretation of multi-case and single-case correlatives.

An unsolved mystery.

- (22) Numeral Quantification blocks Multi-Case Readings
- a. (from Bittner (2001), via Dayal Harvard handout of 02/20/03)  
 [jin do laṛkō-ne jis laṛkii-ko ek phuul di-yaa] [us laṛkii-ne un  
 Rel two boys-Erg Rel girl-Dat one flower give-Pfv.MSg Dem girl-Erg Dem  
 laṛkō-ko pasand ki-yaa]  
 boys-Acc like do-Pfv  
 'Two boys gave a girl a flower. She liked them.'
- b. (from Dayal Harvard handout of 02/20/03)  
 [jin do laṛkō-ne jis laṛkii-ko ek phull di-yaa] [ve tiinō  
 Rel two boys-Erg Rel girl-Dat one flower.M give-Pfv.MSg Dem.Pl three  
 dost hē]  
 friend be.Prs.Pl  
 'Two boys gave a girl a flower. Those three are friends.'

### 3 The Diversity of Correlatives

In most Indo-Aryan languages, correlative clauses are also used to realize conditionals, *when*-clauses, comparatives, and *until*-clauses.

- (23) a. Restrictive Relativization:  
 [jo kitaab sale-par hai] [mē vo khariid-ūgaa]  
 Rel book sale-on be.Prs.Sg I that buy-Fut.1MSg  
 'I will buy the book which is on sale.'  
 (Literally: [which book is on sale], I will buy *that*.)
- b. Conditionals: (Marathi, from Pandharipande (1997))  
 [dzar tyāne abhyās kelā] [tar to pās hoil]  
 if he-Erg studying do-Pst-3MSg then he pass be-Fut-3Sg  
 'If he studies, then he will pass.'

c. Comparatives:

[Rodman ke jitne tattoo hĒ] [Jordan ke-paas us-se jyaadaa Rodman Gen how-many tattoo are Jordan near that-than more khitaab hĒ]  
title are

'Michael Jordan has more scoring titles than Dennis Rodman has tattoos.'  
(Literally: [How many tattoos Dennis Rodman has],  
[Michael Jordan has more scoring titles than *that*])

d. Equatives:

[John bhautiki-me jitnaa kushal hai] [John-kaa bhai ganit-me John Physics-in how-much good is John-Gen brother math-in utnaa kushal hai]  
that-much good is

'John's brother is as good at math as John is at physics.'  
(Lit: [How good John is at physics], [John's brother is *that* good at math].)

e. *until*-clauses:

[jab tak John nahii aa jaa-taa] [tab tak mĒ yahī: rahūgaa]  
when till John Neg come Hab then till I here stay-will

'I will stay here until John arrives.'  
(Literally: [Till when John hasn't come], [I will stay here till *then*])

The surface variation from construction to construction seems limited to the relative phrase and the proform.

Construction	Relative Phrase	Proform
Relativization	[...] <i>jo</i> who [...]	[...] <i>vo</i> he/she [...]
Comparative	[...] <i>jitnaa</i> how-much [...]	[...] <i>us-se jyaadaa</i> that-than more [...]
Equative	[...] <i>jitnaa</i> how-much [...]	[...] <i>utnaa</i> that-much [...]
<i>until</i> clause	[...] <i>jab tak</i> when till [...]	[...] <i>tab tak</i> then till [...]
Conditional	[...] <i>dzar<sup>Marathi</sup></i> if [...]	[...] <i>tar<sup>Marathi</sup></i> then [...]
<i>when</i> clause	[...] <i>jab</i> when [...]	[...] <i>tab</i> then [...]

Can different types of correlative construction be combined? (e.g. a multi-headed correlative involving abstraction over individuals and times/worlds, or individuals and degrees.)

## 4 Conditionals and *when*-clauses

(25) conditional

a. If he studies, he will pass.

b. [dzar tyāne abhyās kelā] [tar to pās hoil]  
if he-Erg studying do-Pst-3MSg then he pass be-Fut-3Sg  
'If he studies, then he will pass.'

Marathi

c. [agar vo paṛhaai kar-egaa] [to vo paas ho jaa-egaa]  
if he study do-Fut.MSg then he pass be GO-Fut-3Sg  
'If he studies, then he will pass.'

Hindi

(26) *when*-clauses

a. When Harry met Sally, she was living in Montreal.

b. [jab Harry Sally-se mil-aa] [tab vo Montreal-me rah rahii thii]  
when Harry Sally-with met then she Montreal-in live Prog was  
'When Harry met Sally, she was living in Montreal.'

### 4.1 Stacked *if*-clauses

The presence of *then* in a conditional is not obligatory. However, if more than one *if*-clause is present, then only the most deeply embedded *then* may be omitted. All others must be present.

- (27) a. If you are back before eight, \*(then) if the roast is ready, \*(then) if we are both hungry, (then) we will have dinner together. (based on an example in Kratzer (1986))  
b. [If you are back before eight] and [if the roast is ready] and [if we are both hungry], we will have dinner together.
- (28) a. \*We will have dinner together [if we are both hungry] [if the roast is ready].  
b. We will have dinner together [if we are both hungry] and [if the roast is ready].

Correlatives unlike headed relative clauses do not allow stacking.

(29) a. Correlative

\*[jo laRkii khaRii hai] [jo lambii hai] [vo Colaba-me rahtii hai]  
Rel girl standing is Rel tall is Dem Colaba-in lives is  
'[Which girl is standing] [who is tall] [she lives in Colaba].

b. Relative Clause

[vo laRkii [jo khaRii hai] [jo lambii hai]] Colaba-me rahtii hai  
Dem girl Rel standing is Rel tall is Colaba-in lives is  
'The girl who is standing who is tall lives in Colaba.'

The stacking constraint follows from the semantics of correlatives.



## 5 *jab tak* ‘until’ Clauses

*jab tak* = ‘when till’

‘so long as’:

(40) *jab tak* clause is a durative event

- a. [jab tak boss office-mē rah-te hĒ] [tab tak ham log khuub  
when till boss office-in stay-Hab.MPI be.Prs.Pl then till we people lot  
kaam kar-te hĒ]  
work do-Hab.MPI be.Prs.Pl

‘As long as the boss is in the office, we work a lot.’

- b. [jab tak tum paisaa de-te rah-oge] [(tab tak) sharaab  
when till you money give-Hab.MPI Prog-Fut.MPI then till wine.f  
beh-tii rah-egii]  
flow-Hab.f Prog-Fut.FSg

‘As long as you keep giving money, the wine will keep flowing.’

(based on Hook (1979):125, also see Hook (1974), and Seguin (1973))

‘until’:

(41) *jab tak* clause is an event that corresponds to a point in time or a limit to the action in the *tab tak* clause

- a. [jab tak John aa nahī: jaa-taa] [tab tak mĒ yahī: rahūgaa]  
when till John Neg come Neg GO-Hab.MSg then till I here

stay-Fut.1MSg

‘I will stay here until John arrives.’

(Literally: [Till when John hasn’t come], [I will stay here till then])

- b. [jab tak vo tasviir khī:ch naa le] [tab tak use paise mat  
when till he picture puul-Pfv Neg TAKE-Sbjv then till he.Dat money Neg  
de-naa]  
give-Inf

‘Don’t give him money until he takes the picture.’

(from Hook (1979):126)

‘by the time’:

(42) *jab tak* clause picks out a point in time, but this point in time does not serve as an end point to the action on the *tab tak* clause

- a. [jab tak us-ne banduuk uṭḥaa-ii] [tab tak sher bhaag gayaa]  
when till Dem-Erg gun.f pick-Pfv.f then till tiger run GO-Pfv  
‘By the time he picked up his gun, the tiger had run away.’

- b. [jab tak tum ‘glamour’-kaa sahii arth samjh-oge] [tumhaare  
when till you glamour-Gen real meaning understand-Fut.2MPI your  
baal safed ho jaa-ēge]  
hair white be GO-Fut.MPI  
‘By the time you understand the true meaning of glamour, your hair will turn white.’

(from Hook (1979):126)

### 5.1 The Logical Possibilities

Aspectual options for the *jab tak* clause:

- (43) imperfective, negated imperfective, perfective, negated imperfective

Similar aspectual options are available for the *tab tak* clause.

→ 16 logical possibilities.

• Not all of these are attested. Seguin (1973) notes that when the *tab tak* clause is perfective, the *jab tak* must also be perfective.

- (44) a. [<sub>jabtak</sub> Imperfective] [<sub>tabtak</sub> Perfective]  
\*He arrived until John was drawing a circle.  
b. [<sub>jabtak</sub> Negated Imperfective] [<sub>tabtak</sub> Perfective]  
\*He arrived until John wasn’t drawing a circle.  
c. [<sub>jabtak</sub> Negated Perfective] [<sub>tabtak</sub> Perfective]  
\*He arrived until John didn’t arrive.

Intuition: A perfective *tab tak* clause requires the *jab tak* clause to provide a point of time. Only a (non-negated) perfective *jab tak* clause can do this.

### 5.2 ‘By the time’: [Perfective] [Perfective]

#### 5.2.1 Interpretation

Relative Completion:

- (45) a. [jab tak ... V<sub>1</sub>-Pfv] [tab tak ... V<sub>2</sub>-Pfv]  
... V<sub>2</sub>-complete ... V<sub>1</sub>-complete ...  
b. [jab tak us-ne banduuk uṭḥaa-ii] [tab tak sher bhaag gayaa]  
when till Dem-Erg gun.f pick-Pfv.f then till tiger.m run GO-Pfv.MSg  
‘By the time he picked up his gun, the tiger had run away.’

### 5.2.2 Relevance for the Compound Verb construction

Hook (1974):182-195 notes that Relative Completion is a reliable diagnostic for Compound Verbs.

Many Indo-Aryan languages have a Compound Verb construction that among other things often marks completion.

- (46) Compound Verbs: *jaa* 'go', *le* 'take', *de* 'give' etc.
- a. Mona aa **ga-yii**/ aa-i  
Mona.f come GO-Pfv.f/ come-Pfv.f  
'Mona has come/come.'
- b. Mona-ne naashtaa kar **li-yaa**/ ki-yaa  
Mona-Erg breakfast.m do TAKE-Pfv.MSg do-Pfv.MSg  
'Mona has had breakfast/Mona had breakfast.'

In (45), we see that there is a Compound Verb in the *tab tak* clause and a Simple Verb in the *jab tak* clause.

- (47) [jab tak ..... V<sub>1</sub>-Pfv] [tab tak ..... V<sub>2</sub> CV-Pfv]

The other combinations are ungrammatical.

- (48) a. \*[jab tak ..... V<sub>1</sub> CV-Pfv] [tab tak ..... V<sub>2</sub> CV-Pfv]  
\*[jab tak us-ne banduuk uṭhaa **li-i**] [tab tak sher bhaag  
when till Dem-Erg gun.f pick take-Pfv.f then till tiger.m run  
**gayaa**]  
GO-Pfv.MSg
- b. \*[jab tak ..... V<sub>1</sub> CV-Pfv] [tab tak ..... V<sub>2</sub>-Pfv]  
\*[jab tak us-ne banduuk uṭhaa **li-i**] [tab tak sher bhaag-aa]  
when till Dem-Erg gun.f pick take-Pfv.f then till tiger.m run-Pfv.MSg
- c. \*[jab tak ..... V<sub>1</sub>-Pfv] [tab tak ..... V<sub>2</sub>-Pfv]  
\*[jab tak us-ne banduuk uṭhaa-i] [tab tak sher bhaag-aa]  
when till Dem-Erg gun.f pick-Pfv.f then till tiger.m run-Pfv.MSg

Hook (1974)'s observation: CV's **cannot** appear in the *jab tak* clause of a Relative Completion construction, and **must** appear in the *tab tak* clause of a Relative Completion construction.

### 5.3 'Until': [Negated Perfective] [Imperfective]

#### 5.3.1 Interpretation

- (49) a.  
b. [jab tak .... Neg V<sub>1</sub> (CV)-Pfv] [tab tak .... V<sub>2</sub>-Impfv]  
... V<sub>2</sub> ... V<sub>2</sub> = V<sub>1</sub>-complete ...  
c. [jab tak maastar-saab aa naī: **gaye**] [tab tak bacce shor  
when till teacher come Neg GO-Pfv.MPI then till children noise  
machaa-te rahe]  
make-Hab.MPI Prog-Pfv.MPI  
'The children kept making noise until the teacher arrived.'

#### 5.3.2 Relevance for the Compound Verb Construction

One hallmark of the Compound Verb construction in the Indo-Aryan languages is that it can (in general) not be negated (cf. Hook (1974), Masica (1976)).

- (50) Yusuf-ne khaanaa naḥī: khaa-yaa/\*khaa **li-yaa**  
Yusuf-Erg food.m Neg eat-Pfv.MSg/eat TAKE-Pfv.MSg  
'Yusuf didn't eat dinner.'

Given this, it is curious that in (49), a Compound Verb appears happily with a negation (cf. Gaeffke (1967)).

In fact, a negation is necessary.

- (51) ???/\*[jab tak maastar-saab aa **gaye**] [tab tak bacce shor  
when till teacher come GO-Pfv.MPI then till children noise  
machaa-te rahe]  
make-Hab.MPI Prog-Pfv.MPI  
'The children kept making noise until the teacher arrived.'

#### 5.3.3 The Semantic Contribution of Negation

The redundancy or non-redundancy of Negation in these *jab tak* clauses depends largely upon how we choose to translate *jab tak*. If we insist on 'until', the Negation appears to be otiose; if we use 'so long as', it does not: So long as the teacher did not arrive, the children kept making noise. (from Hook (1974):218)

Dialectal Variation and 'Expletive' Negation:

(52) (from Seguin (1973), exs. 6, 7)

a. [jab tak .... Neg V<sub>1</sub>-Pfv] [tab tak .... V<sub>2</sub>-Impfv]

[jab tak mastar-ji nahī: pahūch-e] [tab tak larke shor  
when till teacher-Hon.m Neg arrive-Pfv.MPI then till boys noise  
machaa-te rah-e]  
make-Hab.MPI stay-Pfv.MPI

'The boys made noise until the teacher arrived.'

b. % [jab tak .... V<sub>1</sub>-Pfv] [tab tak .... V<sub>2</sub>-Impfv]

%[jab tak mastar-ji pahūch-e] [tab tak larke shor  
when till teacher-Hon.m Neg arrive-Pfv.MPI then till boys  
machaa-te rahe]  
noise make-Hab.MPI stay-Pfv.MPI

'The boys made noise until the teacher arrived.'

(This optionality seems to be restricted to simple perfective verbs in the *jab tak* clause. cf. Hook (1974):219)

#### 5.4 Simultaneity: [Imperfective] [Imperfective]

(53) a. [jab tak ..... V<sub>1</sub>-Impfv] [tab tak ..... V<sub>2</sub>-Impfv]

V<sub>1</sub> and V<sub>2</sub> are both durative. V<sub>2</sub> continues as long as V<sub>1</sub>. It may or may not continue after V<sub>1</sub>.

b. [jab tak tum paisaa de-te rah-oge] [(tab tak) sharaab  
when till you money give-Hab.MPI Prog-Fut.MPI then till wine.f  
beh-tii rah-egii]  
flow-Hab.f Prog-Fut.FSg

'As long as you keep giving money, the wine will keep flowing.'

Formal imperfectivity (i.e. in the form of Progressive/Habitual marking is not necessary. The crucial factor is durativity).

Here, negation is not 'expletive':

(54) (from Seguin (1973), exs. 4, 5)

a. [jab tak aap dhiire gaa-ēge] [tab tak aap acchii tarah gaa  
when till you.Hon slowly sing-Fut.3MPI then till you.Hon goo way sing  
nahī: paa-ēge]  
Neg able-Fut.3MPI

'You won't sing well as long as you sing slowly.'

b. [jab tak aap dhiire nahī: gaa-ēge] [tab tak aap acchii tarah  
when till you.Hon slowly Neg sing-Fut.3MPI then till you.Hon goo way  
gaa nahī: paa-ēge]  
sing Neg able-Fut.3MPI

'You won't sing well until you sing slowly.'

(Literally: 'You won't sing well as long as you don't sing slowly.')

## 6 Comparatives

(55) a. *more* comparative: #(people who came) > #(people expected)

[jitne mĒ sochtaa thaa] [us-se jyaadaa log aaye]  
how-many I thought that-than more people came

'More people came [than I had expected].'

(Literally [How many people I thought would come], [more people than *that* came.]

b. *less* comparative: #(people who came) < #(people expected)

[jitne mĒ sochtaa thaa] [us-se kam log aaye]  
how-many I thought that-than less people came

'Less people came [than I had expected].'

(Literally [How many people I thought would come], [less people than *that* came.]

c. *Equative*: #(people who came) = #(people expected)

[jitne mĒ sochtaa thaa] [utne log aaye]  
how-many I thought that-many people came

'As many people came [as I had expected].'

(Literally [How many people I thought would come], [*that*-many people came.]

- The correlative/comparative clause in (55a-c) is exactly the same.
- What varies is the relationship between the demonstrative and the matrix clause.

## 6.1 Multiple Comparatives

Multiple Comparatives as Multi-Headed Correlatives:

(56) (cf. von Stechow (1984), Kennedy (2000))

- a. More dogs chased more rats than cats chased birds.
- b. [jitnii billiyō-ne jitnii chiriyō-ko daṛaayaa] [us-se jyaadaa  
how-many cats-Erg how-many birds chased that-than more  
kuttō-ne us-se jyaadaa chuuhō-ko daṛaayaa]  
dogs-Erg that-than more rats chased  
'More dogs chased more rats than cats chased birds.'  
(Literally [How many cats chased how many birds],  
[more dogs than *that* chased more rats than *that*].)

(57) (cf. von Stechow (1984))

- a. Less land grows more corn than ever before.
- b. [jitnii zamiin-par pahle jitnaa makka ugtaa thaa] [us-se kam  
how-much land-on before how-much corn grew that-than less  
zamiin-par ab us-se jyaadaa makka ugtaa hai]  
land-on now that- than more corn grows  
'Less land grows more corn than ever before.'  
(Literally [How much land grew how much corn before],  
[Land less than *that* grows more corn than *that*].)

Semantics: maximalization, with a single-case multi-headed correlative

## 6.2 The 'Matching' Requirement

(58) (cf. Chomsky (1981))

- a. More silly lectures have been given by more boring professors than I would have expected silly lectures would be given by boring professors.
- b. \*More silly lectures have been given by more boring professors than I met boring professors yesterday.

(58b) is ungrammatical because it fails the matching requirement.

(59) One Rel Phrase, Two Dem Phrases

[kal mĒ jitne boring profs-se mil-aa] [us-se zyaadaa  
yesterday I how-much boring Profs-with meet-Pfv Dem-than more boring  
boring profs-ne us-se zyaadaa faaltu-ke lecture di-ye]  
Profs-Erg Dem-than more useless-Gen lectures give-Pfv.Pl

The reverse case can also be constructed concretely in Hindi, and somewhat abstractly in English.

(60) Two Rel Phrases, One Dem Phrase

- a. More dogs barked than cats chased rats.  
(Ungrammatical under an analysis where the *than* clause involves multiple degree abstraction.)
- b. \*[jitnii billiyō-ne jitne chuuhō-ko daṛaa-yaa] [us-se zyaadaa  
how-many cats-Erg how-many rats-Acc chase-Pfv Dem-than more  
kutte bhaunk-e]  
dogs bark-Pfv.MPl

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