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Controlled experiencer subjects: implications for phrase structure

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Short abstract

Controlled experiencer subjects: implications for Phrase structure

Government and Binding theory distinguishes between Exceptional Case Marking and Control, while LFG and GPSG do not. A restriction on Controlled PRO in Hindi-Urdu offers support for the GB analysis of ECM. Ordinary control constructions prohibit controlled experiencers (a), while the ECM structure is grammatical with a dative experiencer embedded subject (b). This difference is not explained if both involve control, as in GPSG and LFG, which assigns ECM sentences the control structure (c):

a) NP(i) [PRO(i) VP] V (b) NP [NP VP] V c) NP NP(i) [VP(i)]

Theories of syntax (eg. GB, GPSG) differ in what constituent structure is assigned to constructions such as coreferent subjects (Equi/Control) and Exceptional Case Marking/Raising to Object. A contrast of grammaticality in control constructions in Hindi-Urdu provides arguments for choosing one possible phrase structure analysis over another. English assigns only nominative Case to subjects assigned the thematic role of experiencer in finite clauses. The controlled non-finite VP corresponding to (1) a. is well-formed in English ((1) b.):

1) a. I (nom.) felt anger towards my brother.
b. I don't want [to feel anger towards my brother]

Other languages, such as Hindi and Urdu, have the lexical option of assigning either nominative or dative Case in finite clauses in expressing 'I feel anger towards my brother', as in (2) a/b.:

2) a. mai (nom.) bhaaii-par kroodh kar-taa huu
I brother-on anger do-impf. am

b. mujhee (dat.) bhaaii-par kroodh aa-taa hai
I brother-on anger come-impf is

(The dative mujhee is not a morphological subject but has the antecedence properties of subjects.)

3) a. mai [bhaaii-par kroodh kar-naa] nahii caah-taa huu
I brother-on anger do-inf not want-impf am

b. *mai [bhaaii-par kroodh aa-naa] nahii caah-taa huu
I brother-on anger come-inf not want-impf am

'I don't want to feel anger towards my brother'.

The contrast of non finite clauses in (3) a/b. illustrates the restriction (itself a problem to state) that controlled non-finite VPs are grammatical only if the understood subject/PRO corresponds to a nominative subject ((3) a.), not a dative subject ((3) b.).

This difference in grammaticality in HU suggests that (4) a., not (4) b., is the right phrase structure for participial relatives and (5) a. not (5) b. is right for ECM/Raising:

4) a. [[PRO VP] NP] b. [[VP] NP]

5) . [NP [NP-dat. VP] V] b. NP NP-dat. [(PRO) VP] V

Participial relatives in HU are control constructions, and like (3) b. are ungrammatical if VP assigns dative to its subject. This motivates a subject PRO in (4) a. ECM constructions (6) should be bad if control were at work as in (5) b., but it is grammatical:

6) mai-nee [laRkee-koo kroodh aa-tee huee] dekhaa
I-erg. boy dat anger come-impf see-pf
'I saw [the boy getting angry with his brother]'

Contrasts (4/6) support the GB analysis over a GPSG controlled VP.

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Introduction:

One of the most difficult and intriguing issues in theories of syntax is the treatment of 'understood' elements, ones which are not lexically expressed, but which have linguistic properties, such as grammatical functions, and linguistic antecedents with which they are coindexed and from which they receive identification. Theories of syntax differ in exactly how and where null constituents are introduced, and what their properties are. For example, the taxonomy of empty categories in Chomsky (1981) and succeeding works assigns different syntactic features in the surface syntax to PRO, pro, wh trace and NP trace, while other theories, GPSG (Gazdar et al (1985)) and LFG (Bresnan (1982)) treat a variety of understood phrases as constructions of generalized control, involving semantic or functional interpretation of the subjects of bare VPs.

By their nature, empty constituents, including VP subjects, are elusive and definable only by indirect empirical arguements, often based on theory-specific

assumptions. In this paper, I want to base some arguments for or against the presence of null subjects in Hindi-Urdu on a very concrete and specific syntactic fact, involving dative experiencer subjects. This fact seems, by the arguments to follow, to have important implications for (1) locating control of null subjects as opposed to non-controlled pro or Case-marked NP, and (2) the separate grammatical existence of null subjects, which have independent syntactic properties and are not simply part of the semantic interpretation of a predicate.

In Hindi-Urdu, (as in most languages) the surface string as such underdetermines the location and type of empty categories. The language has some NP movement, though it is not obligatory (Davison (1988)), it may have some limited bound variable traces (in S-structure), again not obligatory, and it has both PRO, the pronominal anaphor, and pro, the null pronominal.

Here I want talk about two constructions, participial relatives and Exceptional Case marking. Schematically, the surface strings are plausibly analyzed in (at least) two ways:

1) Participial relatives:

a. [[**PRO** VP] **NP**] b. [[[**e** VP] **Op**] **NP**]

2) Exceptional Case Marking/Raising to Object/Object Control

a. [NP [**NP-koo** VP] V] b. [NP **NP** [**PRO** VP] V]
GPSG, Gazdar et al (1985)
LFG, Mohanan (1990)

In otherwords, I want to argue that participial relatives in this language do contain controlled PRO, as in (1) a., and that Exceptional Case Marking sentences do not involve control, rather that the structure is really (2) a.

The basic form of the argument is the following: certain experiencer constructions are ungrammatical exactly when in controlled subject constructions. By using such predicates inside paricipial relatives and Exceptional Case Marking complements, we can see from the grammaticality of the experiencer construction whether a construction of obligatory control is present or not.

I will begin by outlining the relevant properties of the dative experiencer construction in Hindi/Urdu, There are several syntactic realizations of experiencer NPs, shown in (3)-(5):

3) **[pitaa-koo]**(i) [apnee (i) bhaaii]-par kroodh aataa hai
father-dat self's brother-on anger come-impf is
EXPERIENCER SOURCE/THEME

'Father(i) is angry with his(i) brother'.

4) **pitaa**(i) [apnee (i) bhaaii] -par kroodh kartaa hai
father-nom. self's brother-on anger do-impf is
EXPERIENCER SOURCE/THEME

'Father(i) is angry/shows anger towards his(i) brother'.

1
5) **pitaa** kroodh-mee aayaa hai
father-nom. anger in come-pf is
EXPERIENCER

'Father got angry/went into a rage.' [1]

The experiencer NP may be dative (3). or nominative (4) and (5). The choice of Case on the experiencer is a lexically specified property of the predicate. Nearly synonymous predicates kroodh aa-naa, kroodh mee aa-naa and kroodh kar-naa

differ in how the experiencer is Case-marked.

The central fact around which the discussion in this paper is contructed is the contrasting grammaticality of the sentences in (6):

6) a. * **pitaa** [PRO bhaaii-par **kroodh aa-naa**] nahii caah-taa
father brother-on anger come-inf not want-impf

'Father doesn't want [PRO to be/get angry at (his) brother]'

b. **pitaa** [PRO bhaaii-par **kroodh kar-naa**] nahii caah-taa
father brother-on anger do-inf not want-impf

'Father doesn't want [PRO to feel/show anger towards his brother]'.

c. **pitaa** [PRO kroodh-mee aa-naa] nahii caah-taa
father anger-in come-inf not want-impf

'Father doesn't want [PRO to get angry]'

The experiencer predicates in (6) have each been embedded in a contruction of obligatory control. The syntactic subject of the embedded predicate is unexpressed, but understood or identified as the matrix subject. In both instances, the experiencer NP is a syntactic subject, as I will show below. The experiencer in (6) a. corresponds to a dative subject NP in (3) while the experiencer in (6) b. and c. correspond to a nominative subject NP in (4) and (5). Only the latter two predicate types are possible in a construction of obligatory control.

At this point, we may rule a Case-mismatch as explanation for the ungrammaticality of (6)a. This sentence might be ill-formed if the controller and the controlled subject have different thematic roles and Cases. In (6) a. the controlled NP is a dative experiencer, while the controller is a nominative experiencer. But it is possible to have a dative experiencer controller as antecedent for a controlled nominative agent, (6) d.

6) d. raaj-koo [PRO kaam karnaa-naa] pasand hai/caahiyee
Raj-dat do work-inf. liking is/ought

'Raj enjoys [PRO doing work]/[PRO ought to do work]

e. *raaj-koo [PRO kroodh aa-naa] pasand nahii hai/
Raj-dat. anger come-in liking not is

[PRO kroodh aa-naa] nahii caahiyee
anger come-inf. not ought

'Raj does not like [PRO getting angry]/Raj ought not [PRO to get angry]'.

With a dative experiencer controller, a controlled experiencer subject is still ungrammatical, in spite of Case or grammatical functional matching between the controller and the target.

To summarize briefly the assumptions so far:

7) a. Experiencer NPs in Hindi/Urdu are syntactic subjects.
b. They are ungrammatical in controlled subject positions <u>if the embedded predicate assigns dative Case when the experiencer NP is lexically expressed.</u>

Before continuing with the development of my argument, I want to comment briefly on this fact. In Hindi-Urdu, as in some other languages, dative experiencers have the paradoxical property that they can serve as subject antecedents for reflexives and controlled null subjects, but cannot themselves <u>be</u> controlled null subjects. In contrast to other languages such as Icelandic (Andrews (1982)) and one of the Quechua languages (Hermon (1978)), this is the

case in Italian, Perlmutter (1979) and in Marathi, Rosen and Wali (1989)) as well as some of the other languages of South Asia. This fact has so far not be characterized without stipulation in any syntactic theory so far. For example, in Perlmutter (1979) and Rosen and Wali (1989), Equi victims/controlled subjects must be final 1s, but subject antecedents may be 'working' 1s, subjects in some stratum of the derivation. I will not try to explain it fully here, though I will offer some discussion below in connection with modifying participles (13)-(15). Rather, I will take it as a given, and use it as a means of distinguishing between competing possible syntactic descriptions of other constructions in Hindi/Urdu.

In order to explore the consequences of the facts in (6), I will first argue for the assumptions in (7) that dative experiencers are subjects, and they are impossible in constructions of obligatory control. The first argument involves reflexive antecedents. In (3)-(5) above, there is a reflexive possessive apnee which requires an antecedent, the experiencer, whether dative or nominative. Not just any dative NP will do, however, only one which is a syntactic subject.

8) a. raadhaa(i) -nee siitaa(j)-koo apnii(i/*j) tasviir dikhaaii
Radha -erg. Sitaa -dat. self's picture show-pf

'Radha(i) showed Sita(j) her (Radha/*Sita) picture'
(Kachru and Bhatia (1975:61)

b. sanjay(i)-nee vijay(j)-koo apnaa (i/*j)saaraa paisaa bheej-aa
Sanjay-erg Vijay-dat. self's all money sent

'Sanjay(i) sent Vijay(j) all his (Sanjay/*Vijay) money'.

Second, the antecedent of certain null subjects must be a subject.
Adverbial clauses marked with the verbal suffix -kar 'perfective' also require a subject antecedent for the missing embedded subject.
If there are several possible antecedents, only the grammatical subject is the antecedent selected as the subject of V-kar.

9) [is baat-koo sun-kar] **pitaa**(i)-koo apnee beeTee(j)-par taras this matter
hear-KAR father-dat self's son on pity

aayaa
came

(i)'[Father] having heard this matter, father felt pity for his son'.

(ii)* 'father felt pity for his son when the son heard this matter'

The sentence is not ambiguous for the reference of the subject of the -kar clause, as this affix selects a subject antecedent.[2] It also involves obligatory control, as the following sentence shows, in (10).

10)[is baat-koo sun-tee hii] **pitaa**-koo **apnee beeTee**-par taras aayaa
this matter hear-impf only father-da self's son-on pity came

i. As soon as father heard this matter, he felt pity for his son'

ii. Father felt pity for his son as soon as the son heard this matter'

The verbal affix -tee hii 'as soon as, immediately upon' allows both subject and object antecedents, as the ambiguity of (10) demontrates. It also does not require a null subject; in fact the subject can be a lexical dative-marked subject.The subject of this adverbial clause is not necessarily corefereent with a NP in the matrix. **Woo**, or its null pronominal counterpart, can be understood here as referring tothe referent of **beeTee**, or some other person.

11) a. [**beeTee**-koo kroodh aa-tee hii] woo ghar-see nikal gayaa
son-dat anger come-impf-emph 3psg house-from left

'As soon as the son got angry, he left the house'

b. *[**PRO** ghar badal-kar] **us-koo** Daak pahucaayaa nahii gayaa
house change-KAR 3psg-dat mail forwarded not go-pf.

'[**PRO** having moved] **he/she** couldn't be sent mail'

Not just any dative-marked NP will do as an antecedent of a -kar subject, as the ungrammaticality (11) b. shows. This sentence would be grammatical if us-koo were a subject, but it is not; goals in Hindi-Urdu are not passive subjects. Though the goal NP in the matrix sentence in (11) b. is thematically higher than the theme Daak, (or the suppressed passive agent) it is not a possible controller.[3]

I have just shown that in constructions of obligatory control, the subject of the matrix is the antecedent of the non-lexical subject of infinitives or -kar clauses. In such constructions, the antecedent may be a dative experiencer, from which I conclude that some dative-marked NPs are grammatical subjects. They are not subjects by the criteria of Case and verb agreement. Since dative experiencers are syntactic subjects, we assume that they could occur as subjects in embedded clauses. In fact they do, but they are excluded in just the constructions involving obligatory control, as shown in (6).

The first possible control construction is built on perfective or imperfective participles used as modifiers. One of the relativization strategies in this language involves a participial clause with a missing constituent, corresponding to the NP head of the phrase. This strategy is highly constrained, however, differing from the Japanese deletion pattern, or the corelative construction in Hindi/Urdu, in which all constituents are accessible to relativization. In the Hindi/Urdu participial relative, the accessible constituents are a subject or an object, defined by the verb's transitivity and aspect affix. Only subjects are accessible in the imperfective, and the unmarked pattern for perfective verbs is shown in (12):

12) a. Imperfectives, transitive and intransitive:

[**e** aisaa kaam kar-tee hu-ee] mazduur
such work do-impf be-impf workmen

'Workmen [**who** [**e** do such work]'

b. Intransitive perfective:

[**e** kal aa-ii hu-ii] laRkii
yesterday come-perf be-perf. girl

'The girl [**who e** came yesterday]'

c. Transitive perfective:

[mistrii-kaa **e** banaa-yaa hu-aa] sanduuq
carpenter-of make-perf.be-perf. box

'The box [**which** [the carpenter made **e**]]'

d. * [**e** sanduuq banaa-yaa hu-aa] mistrii
box make-perf.be-pf. carpenter

'The carpenter [**who** [**e** made the box]'

When the modifying participle is perfective, the missing phrase is the subject of an intransitive verb, or the object of a transitive verb (see Subbarao (1985:167ff. for discussion)). (There are interesting lexical exceptions, by which transitive verbs behave as intransitives, allowing null subjects instead

of objects.) The 2 alternative syntactic descriptions here are:

13) a. Deletion by identity with the head (or null pronominals identified by the head) is restricted to subjects and objects, further constrained by verb transitivity, aspect and lexical exceptions.

b. The missing subject is controlled PRO, in a position which is ungoverned in a non-finite clause: the factors of transitivity, aspect and lexical properties define a single ungoverned position.

The second alternative seems more plausible as a way of singling a controlled position, which is normally a subject position in most languages. Some confirmation comes from putting an experiencer predicate in the relative participle:

14) a. * [**e** bhaaii-par kroodh aa-taa hu-aa] aadmii
brother-on anger come-impf be-pf man

'The man [**who** [**e** gets angry with his brother]]'

b. * [aadmii-koo **e** kroodh aa-yaa hu-aa] bhaaii
man -dat anger come-pf be-pf brother

'The brother [**at whom** [the man got angry **e**]'

c. * [aadmii-koo bhaaii-par **e** aa-yaa hu-aa] kroodh
man -dat brother-on come-pf be-pf anger

'The anger [**which** [the man felt **e** at his brother]]'

The ungrammaticality of (14) a. shows that the null subject which would otherwise be dative is not possible in the context, the behavior of dative experiencers in controlled subject position. In fact, no relative participle is possible using a verb which takes a dative experiencer subject, as in (5) a. Experiencer NPs which are otherwise marked as nominative do occur in thse constructions:

15) [**e** bhaaii-par kroodh-mee aa-yaa hu-aa] aadmii
brother-on anger-in come-pf be-pf man

'The man [**who** [**e** got angry with his brother]]'

If the participial relative construction involves deletion by identity, then the contrast in grammaticality of (14) a. and (15) is unexplained. One might argue that experiencers are never deleted by identity because they rank below subjects and objects in an accessibility hierarchy (cf. Keenan and Comrie (1977)). But in stating the antecedence conditions on reflexives and PRO V-kar, experiencers rank higher than goals and themes.

If the participial relative construction is an instance of controlled PRO, then the contrast in grammaticality of (14) a and (15) is an example of the contrast between (6) a. and (6) b. The experiencer PRO is unavailable for the same reason as it is in other intances of controlled PRO, for whatever the reason is that this so.

I will digress here briefly to discuss the implications of controlled participles having PRO subjects or objects. It was shown in (6) that controlled PRO subjects of infinitives correspond only to nominative lexical subjects. In participles, as in finite clauses, subjects and objects both may be marked by nominative Case (ie the absence of a lexical postposition). Goals and certain objects must be postpositionally marked. Let us speculate that PRO is only possible in positions which receive Structural and not Lexical Case, with nominative being the preeminent Structural Case (this is the main language-specific and lexcial item-specific stipulation). The sentence (6) a. is ungrammatical because the matrix verb demands a PRO subject in its complement, but as the complement verb does not allow structural nominative case, this subject must be lexical and postpositionally Case-marked.

Returning to the main issue of this paper, I turn to another problematic construction, the one known variously as Raising to Subject and Exceptional Case Marking. In Hindi/Urdu, this construction typically involves non-finite complements of verbs like deekh- 'see', sun- 'hear' and paa- 'find. The internal clause is marked with perfective or imperfective aspect, and the subject is marked with the dative postposition -koo. Some examples include (16) a. and b.

16) a. raam-nee **moohan-koo** kavitaa likh-tee hu-ee deekhaa
Ram-erg. Mohan-dat. poem write-impf be-pf see-perf.

(i) Ram saw Mohan write a poem'
(ii) Ram saw Mohan while writing a poem' (Subbarao (1984:171-2

b. saritaa-nee **prasaad-koo** kamree-mee baiTh-ee hu-ee paa-yaa
Saritaa-erg. Prasad-dat. room-in sit-perf. be -pf. found

'Sarita found Prasad sitting in the room (Subbarao (1985:172)

The -koo marked NP is always and only a subject. This construction distinguishes different subjects in active and passive versions of the same complement sentence, with respect to which NP has the obligatory koo subject marker:

17) a. padma-see **kisii-koo** maar-ee jaa-tee hu-ee deekh-aa nahii
Padma-by some-dat beat-pf go-impf be-pf see-pf not

jaa-taa
go-impf.

'Padma cannot (stand to) see **anyone** being beaten'
(Subbarao (1984: 87)

b. padma-see **pulis-koo** kisii-koo maar-tee hu-ee deekh-aa nahii
Padma-by police-dat some-dat beat-impf be-pf see-perf. not

jaa-taa
go-impf.

Padma can't stand to see the police beating anyone'

c. * padma-see **kisii-koo pulis** maar-tee hu-ee deekh-aa
Padma-by some-dat police-nom beat-impf be-pf see-perf.

nahii jaa-taa
not go-impf.

* Padma can't stand to see anyone the police beating'.

The passive construction in the complement of (17) a. defines **kisii-koo** as the complement subject, while the active verb in the complement of (17) b. defines **pulis-koo** as the subject. Switching the direct object **kisii-koo** with the nominative subject **pulis** results in an ungrammatical sentence. The sentence in (17) c. shows that dative marking in itself is not sufficient, as the dative -koo on an object does not meet the condition that the koo -marked NP is a syntactic subject.

The NP subject of the complement can be represented in two ways. Either it is a constituent of the main clause, and controls a null subject of the internal non-finite complement, or it is simply a constituent of the embedded complement, and receives Case from the matrix verb. These possibilities are sketched schematically in (18):

18) a. NP **NP** [PRO VP] V (Object-controlled PR0/Equi)
(Gazdar et al (1985), Mohanan (1990))

b. NP [**NP** VP] V (Exceptional Case Marking (Chomsky (1981))

That is, the sentence in (16)-(17) are either intances of obligatorily controlled PRO, for the embedded clause subject, or of exceptional Case marking across a clause boundary. We can distinguish these two accounts by placing a dative experience subject within this construction. The alternatives are as follows: If it is an instance of obligatorily controlled PRO, then an controlled experiencer could be ungrammatical if the predicate otherwise selects for a dative subject. If Exceptional Case Marking is involved, then the construction should be grammatical. The experiencer NP is a syntactic subject of the complement, and Hindi/Urdu apprently tolerates redundant or double Case marking (once from the internal predicate, once from the matrix.

The examples below are grammatical for most speakers.

19) [PRO [baccee-koo buxaar aa-tee] deekh-kar] maa-nee
child-dat fever come-impf see-KAR mother-erg

DaakTar-koo bulaa-yaa
doctor-dat call-perf.

'[PRO seeing [**the child** getting a fever]], the mother called the doctor'.

20) baccee-nee [**pitaa-koo** kroodh aa-tee hu-ee] deekh-aa
child-erg. father-dat anger come-impf be-pf see-pf

'The child saw [**father** getting angry]'

(For some reason, the non-finite context in the -kar clause of (19) is better for some speakers who do not fully accept (20).) These sentences should not be possible at all if the structure is a control structure (18)a. If it were, it should be as absolutely ungrammatical as (5) a., which is ill-formed for all speakers.
The evidence in (19)-(20) argues that Exceptional Case Marking is the preferred analysis for this construction.

Recall that (16)a. above is ambiguous. In one reading, the embedded nonfinite clause has a dative-marked subject, and thus forms a complete clause. In another, it has a controlled null subject, as a participial relative modifying the matrix subject.
Schematically, the two readings correspond to the different structures in (21):

21) a. raam-nee [**moohan-koo** kavitaa likh-tee hu-ee] deekhaa
Ram-erg. Mohan-dat. poem write-impf be-pf see-perf.

(i) Ram saw [Mohan write a poem]'

b. raam(i)-nee **moohan-koo** [PR0(i) kavitaa likh-tee hu-ee] Ram-erg.
Mohan-dat. poem write-impf be-pf

deekh-aa
see-perf.

(ii) Ram saw Mohan while writing a poem' (Subbarao (1984:171-2

The structure in (21) a. is not a control structure, so it allows an embedded experiencer dative. If such a dative experiencer occurs, then the structure (21) b. is ill-formed, so that sentences like (19) and (20) are predicted to be unambiguous.

A final consequence of the dative experiencer constraint has to do with the syntactic representation of controlled subjects. I have used PRO as a syntactic constituent, a null pronominal anaphor in the categorization of Chomsky (1981) and (1982). It has syntactic properties, such as being ungoverned, Case-less, and able to have an antecedent with an independently assigned Theta role ((22) a.). An alternative explored in formal semantics and GPSG is a bare VP, a syntactic

constituent belonging to the semantic type predicate, denoting a property ((22) b.). While there are important considerations raised by each side of this issue (which deserve serious attention) I want to note that the dative experiencer constraint refers to an unexpressed subject independently of its antecedent.

22) a. NP(i) [PRO(i) VP] V
(thetarole) (experiencer)(dative assigner)

b. NP(i) [VP] V
(argument structure)
subject = NP(i)

What makes a control structure in (22) ungrammatical is the relation of a subject to the embedded VP. The predicate in VP assigns an experiencer role and dative Case. What is assigned these properties is in the position of PRO in (22) a. But the structure in (22) b. has no syntactic structure to which to ascribe these properties. The experiencer in the argument structure of VP is identified in semantic interpretation as the referent of the matrix subject. There is no way of differentiating the ill-formed structure of (6) a. from (6) b, as both would have the structure (22) b. (GPSG might stipulate that the class of dative experiencer predicates does not occur with the class of verbs which allow/require controlled complement subjects).

Conclusion

In this paper, I have explored the consequences of a fact about experiencer subjects in Hindi-Urdu. Some predicates assign dative rather than nominative Case to the NP with the experiencer thematic role; this NP has the syntactic properties of subjects. These subjects cannot occur in constructions of obligatory control, or non-finite clause subjects which cannot be governed and receive Case. This restriction extends to experiencers in other constructions, and suggests that participial relatives involve control rather than a null operator or pro in Government and Binding theory, or equivalent foot-features in GPSG. Paricipial complements, on the other hand, involve Exceptional Case Marking rather than control of a bare VP. These idiosyncrasies of dative experiencers are located in the complement subject position, rather than in its controller, which can have different Case and even a different thematic role. This fact argues for the syntactic presence of a subject, or PRO. These arguments allow a closer specification of understood subjects than in possible just from inspection of surface strings, which as often is the case, underdetermine the correct phrase structure analysis.

APPENDIX

There is an interesting contrast between Marathi and Hindi-Urdu. Dative experiencers may be PRO subject antecedents of participles, as in (a), but dative marking alone is not enough (b). A dative-marked subject (c) may not be embedded in a control structure (d). Yet a dative experiencer (e) may be the controlled NP (f), arguing that participle in Marathi do not involve control, unlike the corresponding participle in Hindi-Urdu.

The examples from Marathi come from (Rosen and Wali (1989)):

a. ravi-laa [PRO taajmahal paah-**un**] samaadhaan vaaTla
Ravi-dat Tajmahal see-PRT satisfaction felt

'Ravi felt satisfaction [PRO having seeen the Tajmahal'

b. *ravi-laa [PRO ghari jaa-**un] he patra potel**
Ravi-dat. home go-PRT this letter reach-fut.

'This letter will reach Ravi [PRO having gone home]'

c. ravi-laa mini aavDte

Ravi-dat. Mini be pleasing

'Ravi likes Mini'

d. *ravi-ni [PRO mini aavDaay-caa] prayatna kelaa
Ravi-erg Mini be pleasing-inf effort do-pf

'Ravi tried [PRO to like Mini]'

e. [jyaa mulgi goD aavDta] ti mulgi goD aste
which girl sweets like-pres that girl sweet is

`The girl who likes sweets is sweet'

f. [e goD aavD-Naari] mulgi goD aste
sweets like-participle girl sweet is

'The girl who likes sweets is sweet'

Notes

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1. For some speakers, the combination kroodh-mee aa- 'go into anger' does not allow a theme NP marked with -par 'on' (Harbir Arora, p.c.)

2. The matrix antecedent and the controlled subject may differ in thematic roles, and in volitionality. For example in (i), the matrix subject is an experiencer, but the controlled subject is an agent:

i) [**PRO** ghar aa-kar] **us-koo** sird-dard aayaa
house-come-KAR 3psg-day headache come-pf

'[**PRO** having come home] **s/he** got a headache'

Note that the reverse relation is not true; an experiencer dative subject is not possible in the controlled subject position of -kar.
(Thanks to John Paolillo for discussion on this issue, in which the facts of Hindi-Urdu differ from those of Sinhala.)

3. This sentence has a grammatical reading, in which the unexpressed agent of bheejaa jaataa 'is sent' is the controller of [PRO V-kar]. Lexically expressed passive agent phrases also serve as antecedents of reflexives, from which we can conclude

that thwey have some subject properties (as daughters/specifiers of IP). See Davison (1988) for more examples and proposals for representation.