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CASE-MARKING AND θ -MARKING IN MALAYALAM:
IMPLICATIONS FOR THE PROJECTION PRINCIPLE

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In section 1 of this paper, I shall examine some instances of Case-marking in Malayalam which have a bearing on the claim of the theory of Government and Binding (GB) that Tense (and not the Verb) Case-marks the subject of a sentence (Chomsky 1981). I shall show that Case-marking of the subject in Malayalam is determined by either the Verb or Tense/Aspect, or both, depending on inherent properties of these elements; but in the unmarked case, the verb Case-marks the subject. I shall suggest how GB might try to accommodate itself to this fact.

In section 2, I shall present Malayalam examples of a phenomenon which I shall call "dual projection", where the θ -frame and the Case-frame of a sentence are determined by different lexical items. The Case-frame is determined by the head of the VP (as is normal); but the θ -frame is determined by the head of an NP which is embedded in the VP. I shall suggest that this can be partly explained if we claim that selection may be 'non-local', whereas Case-marking must be 'local'. I shall show that the "dual projection" sentences have serious implications for the Projection Principle (Chomsky 1981).

1

Evidence that the Malayalam verb must be allowed to Case-mark the subject has been presented in Mohanan (1982a). The evidence is very straightforward. Malayalam has a small class of verbs, such as wiṣakk 'be hungry' and weedanikk 'have pain', which induce Dative Case-marking of the subject as opposed to the normal Nominative Case-marking:¹

- (1) a. awaḷkkə wiṣakkunnu
she-d be hungry-Pres.Ind.
'She is hungry.'
b. awaḷ pookunnu
she-n go-Pres.Ind.
'She goes.'

The Dative Case on the subject shows up in association with the wiṣakk-class of verbs, irrespective of whether the sentence is tensed or non-tensed:

- (2) a. awan [awalkkə wiṣakuwaan] praartṭhiccu
 he-n she-d be hungry-Inf. pray-Past
 'He prayed for her to be hungry.'
 b. awan [awaḷ pookuwaan] praartṭhiccu
 he-n she-n go-Inf. pray-Past
 'He prayed for her to go.'

Obviously, it is the Verb, and not Tense, which Case-marks the subject in these cases.

However, the Tense/Aspect system also plays a role in the Case-marking of the subject. Thus Malayalam has an aspect-marker -aam (signifying permission) which requires a Dative subject:

- (3) a. niṇalkkə pookaam
 you-d go-Permission
 'You may go.'
 b.* niṇaḷ pookaam
 you-n go-Permission
 (4) a. niṇalkkə wiṣakkaam
 you-d be hungry-Permission
 'You are permitted to be hungry.'
 b.* niṇaḷ wiṣakkaam
 you-n be hungry-Permission

Notice that the difference between wiṣakk and pook as regards the Case they assign to the subject (cf. (1a) and (1b)) is neutralized here by -aam, which gives an invariable Dative Case to the subject. We can describe this situation by saying that the Case assigned by Aspect (or Tense) overrides the Case assigned by the Verb, a fact which can be formally encoded as follows. Suppose we say that every verb stem is associated with a feature (or set of features) specifying a Case-frame, and that some of the tense- and aspect-markers are also associated with such features. The Feature Percolation Conventions motivated in Lieber (1980) say that (in lexical structure) it is the features of the affix (and not of the stem) which percolate upward to the dominating branching node; but that if the affix does not specify a value for a certain feature, the value given to it by the stem will percolate upward. Given these conventions, the Case-marking of the subject will take place correctly, as shown below:

- (5)
$$\begin{array}{c} \text{wiṣakk-unnu} \\ \text{[Dative Subject]} \\ \swarrow \quad \searrow \\ \text{wiṣakk} \quad \text{-unnu} \\ \text{[Dative Subject]} \quad \text{[∅-Case Subject]} \end{array}$$
- (6)
$$\begin{array}{c} \text{pook-unnu} \\ \text{[Nominative Subject]} \\ \swarrow \quad \searrow \\ \text{pook} \quad \text{-unnu} \\ \text{[Nominative Subject]} \quad \text{[∅-Case Subject]} \end{array}$$
- (7)
$$\begin{array}{c} \text{wiṣakk-aam} \\ \text{[Dative Subject]} \\ \swarrow \quad \searrow \\ \text{wiṣakk} \quad \text{-aam} \\ \text{[Dative Subject]} \quad \text{[Dative Subject]} \end{array}$$
- (8)
$$\begin{array}{c} \text{pook-aam} \\ \text{[Dative Subject]} \\ \swarrow \quad \searrow \\ \text{pook} \quad \text{-aam} \\ \text{[Nominative Subject]} \quad \text{[Dative Subject]} \end{array}$$

If a tense- or aspect-marker has its own values for the Case-assignment features, it blocks the values of the corresponding features of the verb; otherwise it is 'transparent' and lets the verb's Case-assignment features go through.

However there is an interesting instance of Case-marking in Malayalam which argues that the feature percolation mechanism is inadequate for expressing the way the lexical features of complex forms are determined. The verb *iṣṭappet* 'like' takes a Nominative subject normally, but takes a Dative subject in the past tense:

- (9) a. *awal awane iṣṭappetunnu*
 she-n he-a like-Prés.Ind.
 'She likes him.'
- b.* *awalkkə awane iṣṭappetunnu*
 she-d he-a like-Prés.Ind.

- c. awalkkə awane ištappettu
 she-d he-a like-Past
 'She liked him.'
- d.? awal awane ištappettu
 she-n he-a like-Past

The point to note is that the feature of taking a Dative subject cannot be associated either with the verbal stem *ištappet* (which takes a Nominative subject normally) or with the past tense-marker (which is normally a 'transparent' affix in Malayalam, inducing no Case-marking of its own on the subject). This feature, therefore, will have to be generated by means of a rule which becomes applicable at the point where *ištappet* and the past tense-marker are put together. In other words, we need a mechanism to associate features directly with complex forms. This should not be very surprising when we consider that such a mechanism is needed anyway for lexical semantics; since the semantic features of a complex lexical item are not always determined by the semantic features of its component elements.

I now wish to suggest that there is an example closer home (for English speakers) of a Case-frame being associated directly with complex verbal forms. It is well-known that the introduction of Passive morphology brings about a change in the properties of the verb; this change has been variously analyzed as a change in the verb's grammatical relations (Relational Grammar and Lexical Functional Grammar) and as a change in the verb's Case-marking properties (GB). Simplifying a little, we can think of Passive morphology as consisting of an auxiliary *be* and a suffix *-en* which gets attached to the verb. Neither the auxiliary nor the suffix is peculiar to the Passive. The auxiliary occurs also with the Present Participle of the verb, which governs the same grammatical (or Case) relations as the simple active verb. The *-en* suffix also forms the Perfect Participle, which (again) has the grammatical (or Case) relations of the active verb. Therefore the relations of the Passive sentence can be associated with the verb only at the point where it has been composed with both the suffix *and* the auxiliary.²

Whether (or not) the above observation about the English Passive is correct, we can make the following generalization on the basis of the Malayalam data alone: both the verb *and* the Auxiliary play a role in determining the Case-frame of a sentence. There are three ways in which they may do this: the Auxiliary

may be 'transparent', letting the verb's inherent properties dictate the Case-marking entirely; the Auxiliary may be partially 'opaque' — it may modify the verb's Case-marking in terms of its own Case-marking feature;³ the verb and the Auxiliary may compositely determine Case-marking.

We may also make another observation in the light of the Malayalam data: in the unmarked case, the verb determines the Case-frame of the sentence, including the Case of the subject. If we extend this observation to English, we can see that there is a better alternative to the GB claim that Tense Case-marks the subject: we can say that Tense in English is 'transparent' and lets the verb Case-mark the subject; but that Infinitive and -ing block the verb-induced Case, and assign no Case of their own.⁴

2

Malayalam has several instances of the relation exemplified in English by the sentence pairs:

- (10) a. I permitted him to leave.
b. I gave him permission to leave.

I give below some Malayalam examples:

- (11) a. *raajaawə mantriye aṭiccu*
king-n minister-a beat-Past
'The king beat the minister.'
b. *raajaawə mantrikkə oru aṭi⁵ koḍuttu*
king-n minister-d one beating-a give-Past
'The king gave the minister a beating.'
- (12) a. *raajaawə awane rakṣiccu*
king-n he-a protect-Past
'The king protected him.'
b. *raajaawə awanə rakṣa nalki*
king-n he-d protection-a give-Past
'The king gave him protection.'
- (13) a. *raajaawə awane snehikkunnu*
king-n he-a love-Pres.
'The king loves him.'
b. *raajaawinə awanoodə sneham unṭə*
king-d he-d2 love-n have-Pres.
'The king has love towards him.'
- (14) a. *raajaawə mantriye pookkuwaan anuwadiccū*
king-n minister-a go-Inf. permit-Past
'The king allowed the minister to leave.'

- b. raajaawə mantrikkə pookuwaan
 king-n minister-d go-Inf.
 anuwaadam koduttu
 permission-a give-Past
 'The king gave the minister permission to
 leave.'

There are some very interesting facts about Case-marking and θ -marking in these sentences; but before we begin to examine them I wish to establish two points. First, in the (b) sentences of (10)-(14), the deverbal nominal - e.g. rakṣa in (12b) - is not part of a [y N-V] compound, but an NP which is a sister of V. This should be obvious in the English example (10b), since gave and permission are not contiguous; also in a case like (11b), where the nominal takes an article as a modifier - oru ati 'a beating'. But in the other cases also, the nominal can take a modifier (an adjective), cf.

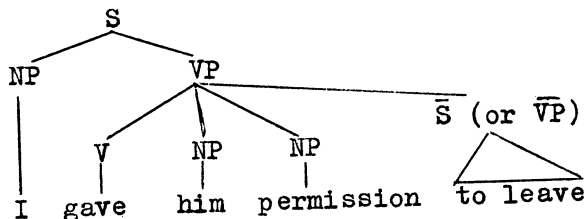
- (12b') raajaawə awanə puurnamaaya
 king-n he-d complete
 rakṣa nalki
 protection-a give-Past
 'The king gave him complete protection.'
- (13b') raajaawinə awanoodə waluṭaaya
 king-d he-d2 great
 sneeham unṭə
 love-n have-Pres.
 'The king has great love towards him.'
- (14b') raajaawə mantrikkə pookuwaan
 king-n minister-d go-Inf.
 takkataaya anuwaadam koduttu
 appropriate permission-a give-Past
 'The king gave the minister appropriate
 permission to leave.'

And the nominal can be moved away from the V by the application of scrambling:

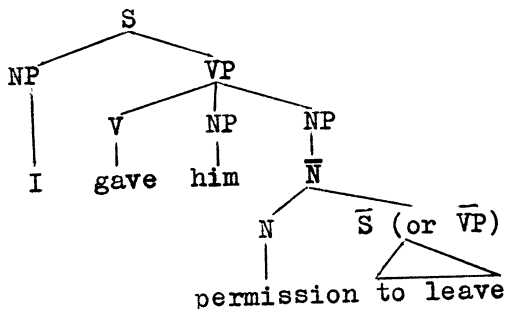
- (12b'') rakṣa awanə raajaawə nalki
 (13b'') sneeham raajaawinə awanoodə unṭə
 (14b'') raajaawə pookuwaan anuwaadam mantrikkə
 koduttu

The second point I wish to make is that none of the arguments of the deverbal nominal is within the NP containing that nominal. The arguments are realized as complements of the V or (as the case may be) as the subject of the sentence. E.g., (10b) has the structure (15a), and not (as one might suppose) (15b); and (13b) has the structure (16a),⁶ and not (16b).

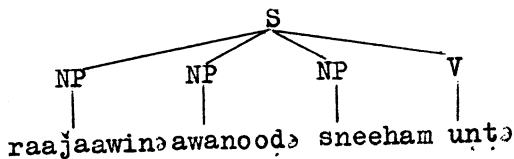
(15) a.



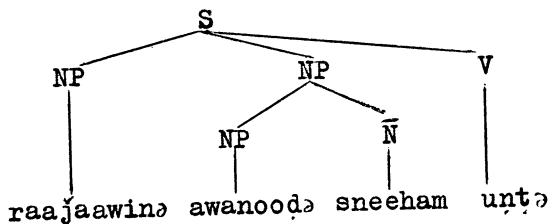
b.



(16) a.



b.



Evidence in support of the structure (15a) (rather than (15b)) comes from the fact that the sentence in question shows the Dative Alternation:

- (17) a. I gave him permission to leave. (= (10b))
 b. I gave permission to him to leave.

If permission to leave were a single constituent (constituting an NP), as shown in (15b), it is difficult to imagine how to him could be introduced into

the middle of it. Consider also a sentence which is similar to (17b), namely (18):

(18) He received permission from me to leave.

Now, to-NP is a PP for which give is subcategorized, and from-NP is a PP for which receive is subcategorized (cf. I gave a book to him; I received a book from him). (18) makes the same point as (17b), namely that a PP for which the V is subcategorized cannot very well be embedded within one of the V's NP complements.

In the case of the Malayalam example, we can choose (16a) over (16b) on the ground that awanooda can be moved away from sneeham by scrambling:

(19) awanooda raajaawina sneeham unta

In Malayalam, scrambling cannot move a part of an NP outside that NP:

(20) a. \bar{n} aan [NPawante pen η nale] sneehiccu
 I-n he-g sister-a love-Past
 'I loved his sister.'
 b.* awante \bar{n} aan pen η nale sneehiccu

Having established the correct structure of the (b) sentences of (10)-(14), let us note the following facts:

(i) The Case-frame of the sentences is determined by the verb. This is more apparent in the Malayalam examples, since Malayalam has a more developed Case system. The 'normal' Case-frames of the verbs which occur in (11b) and (12b) are illustrated below:

(21) a. raajaawa awana oru toppi koduttu
 king-n he-d one cap-a give-Past
 'The king gave him a cap.'
 b. raajaawa awana oru toppi nalki
 king-n he-d one cap-a give-Past
 (same as above)

Compare (21a) and (21b) with (11b) and (12b), respectively. Note that one of the positions in the Case-frame of the verb is occupied by the deverbal nominal; the position it chooses seems (invariably) to be that of the Theme-argument of the verb. The arguments of the deverbal nominal are accommodated in the remaining positions of the verb's Case-frame. In making this

'accommodation', the thematic frame of the deverbal nominal is 'aligned' (in ways which I cannot yet formalize) with the thematic frame of the verb; this is best illustrated by the two related sentences, (17b) and (18). In forming these sentences, the subject and the direct object of permit are interpreted as Source and Goal, respectively; and they are assigned to the positions of Source and Goal in the Case-frames of give and receive.

(ii) The sentences (13b) and (14b) illustrate the situation where the Case-frame of the verb cannot accommodate all the arguments of the deverbal nominal. The 'normal' Case-frame of kodukk is illustrated in (21a); that of untə is illustrated below:

(22) raajaawina oru toppi untə
 king-d one cap-n have-Pres.
 'The king has a cap.'

Compare (21a) and (22) with (14b) and (13b), respectively. The extra argument in (14b) presents no problem for Case-marking, since it is sentential and therefore needs no Case. In (13b), the extra argument is marked Second Dative.⁷ The general Case-marking strategy in such situations seems to be to give the extra argument a Case which is determined by its thematic role.

But the fact of there being an "extra" argument highlights an important aspect of the structure of (13b) and (14b) (and indeed, of all the (b) sentences of (10)-(14)); namely that in each of them, the selectional frame (thematic structure) which underlies the sentence is that of the deverbal nominal. Thus, kodukk 'give' is not strictly subcategorized to take a sentential complement; yet in (14b) it must take such a complement, because a sentential argument is part of the selectional frame of anuwaadam 'permission'. Similarly, untə 'have' does not take an argument in the Second Dative; yet (13b) is incomplete without this argument, because it is required by the Θ -frame of sneham 'love'. I.e., in sentences of this type, the selectional frame is projected by the deverbal nominal, whereas the Case-frame is projected by the verb.⁸ Let us call this phenomenon "dual projection".

"Dual projection" sentences have several important consequences for the Projection Principle of Chomsky (1981). This principle claims that syntactic representations at all three levels — D-structure,

S-structure, and LF — are projections of the thematic structures (hence the subcategorizations) of lexical items. The Projection Principle is stated as follows (see (5) and (6) of chapter 2, Chomsky (1981)):

- (23) Given either of the following structural configurations, where α is an immediate constituent of γ :

$$[\gamma \dots \alpha \dots \beta \dots]$$

$$[\gamma \dots \beta \dots \alpha \dots]$$

- (i) If β is an immediate constituent of γ at L_i , and $\gamma = \bar{\alpha}$, then α θ -marks β in γ
- (ii) if α selects β in γ as a lexical property, then α selects β in γ at L_i
- (iii) if α selects β in γ at L_i , then α selects β in γ at L_j .

(The variables L_i and L_j range over the "syntactic levels": LF, D-structure, S-structure.) Case (i) of (23) claims that a lexical category θ -marks all its complements. This is clearly untrue of the "dual projection" sentences, where the verb's complements are not θ -marked by the verb, but by the head of one of its complements. (The most striking cases of this type are sentences like (13b) and (14b), where there are more arguments in the operative θ -frame than the verb's Case-frame can accommodate.) Case (ii) says that if a lexical or phrasal category is lexically specified as θ -marking a certain position (which it c-commands), it does this at every syntactic level. This condition is irrelevant to the "dual projection" sentences, since the deverbal nominal does not c-command the positions it θ -marks; also, it is difficult to imagine how the "quirky" θ -marking that we are considering can be expressed by a lexical specification. (Case (iii) simply stipulates that θ -marking is the same at all three syntactic levels.)

We see that "dual projection" sentences pose a serious problem for Chomsky's (1981) version of the Projection Principle. Yet obviously, we cannot abandon the central insight of such a principle, namely that syntactic structure is determined by the thematic structure of lexical items in some way. What we must clearly abandon is the notion that the mapping between thematic structure and syntactic

structure is a trivial one. To determine the exact nature of this mapping will be a challenging task for future research.

I wish to suggest that we can make a beginning by considering again an insight expressed in Aspects (Chomsky 1965); namely that selectional restriction is not "strictly local". Suppose we say that one of the important differences between Case-marking and θ -marking is the following: Case-marking by a lexical category must be 'local' with respect to the maximal projection of that category; but θ -marking by a lexical category may be 'non-local'. Of course, the next most pressing (and interesting) question is: in what precise ways may θ -marking be non-local?

Notes

1. n = Nominative; a = Accusative; d = Dative; d2 = Second Dative; g = Genitive.
2. This conclusion can be avoided only by claiming that English has two homophonous verb forms, a Perfect Participle and a Passive Participle, each governing a different Case-frame (or set of grammatical relations). This (indeed) is the proposal of Lexical Functional Grammar (Bresnan 1982). (The invariable identity of form of the Perfect and Passive participles can perhaps be explained by positing a morphological process of zero-affixation which derives one from the other.)
3. The Auxiliary is never totally 'opaque'. Thus, the Malayalam aspect-marker -aam imposes its own Case on the subject but otherwise lets the verb's Case-marking features go through. In fact, I have not been able to find an auxiliary element which affects the Case-marking of more than one position in the sentence. A thought which may be relevant at this point is the following: Suppose my observation about the English Passive is incorrect. Then we have no counterexample (that I am aware of) to the following generalization: the Auxiliary can affect the case only of the subject, not of any position in the VP. It would be interesting to find an explanation for this.
4. Such a move has the following implications. If the positions which a category Case-marks must be a subset of the positions it governs, we must now say that the verb also governs the subject. Mohanan (1982a) discusses some facts about pronominal

interpretation in Malayalam which (in fact) suggest this conclusion. While there is no difficulty in devising a way to make the verb govern the subject (one can simply treat S as a projection of V), this move (in turn) has implications for the distribution of PRO, which may necessitate an extensive revision of GB theory.

Another tack to pursue would be to delink Case-marking and government. This would make it possible for the subject to be Case-marked by the verb but not governed by it. (But see, again, the evidence of Mohanan (1982a).)

5. The Accusative is overtly marked only in the case of an animate NP. Since the Nominative Case-marker is 'Ø', oru ati in the example above is indistinguishable from the Nominative.
6. Malayalam probably has a "flat" structure; see Mohanan (1982b) for some evidence.
7. The Second Dative is used in Malayalam for the Goal of certain types of directional verbs, e.g.

ñaan	awanoodə	oru	kaaryam	paraññu
I-n	he-d2	one	matter-a	say-Past

 'I spoke to him about a (certain) matter.'
8. This fact has been independently noted by K.P. Mohanan (Mohanan 1982c).

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