

AGREEMENT AND INCORPORATION IN ATHABASKAN AND IN GENERAL

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0. Introduction.

In many languages of the world, the verbal inflection contains an element, commonly labelled "agreement", reflecting the person and number categories of the subject of the sentence. Three typical examples are given in (1) below, with the relevant inflections underlined:

(1) (a) *Spanish (Indo-European, Romance):*

Yo hablo. 'I speak.'

(b) *Navajo (Athabaskan):*

Shí yáshti'. 'I speak.'

(c) *Miskitu (Macro-Chibchan):*

Yang aisisna. 'I speak.'

In these examples, the agreement is "construed with" an overt subject -- in this instance, with the independent first person singular pronominal subject *yo*, *shí*, *yang* 'I'. But depending upon the "richness" of the subject agreement inflection in a given language, the syntactic subject may be non-overt instead. This is an option in the three languages just illustrated. Thus, besides (1), we also find (2) below:

(2) (a) *Spanish:*

Hablo. 'I speak.'

(b) *Navajo:*

Yáshti'. 'I speak.'

(c) *Miskitu:*

Aisisna. 'I speak.'

This alternative is sometimes referred to as "null-anaphora", and a language which utilizes it is sometimes referred to as a "pro-drop" or "null subject" language. We do not, as yet, fully understand the nature of the "richness" condition on the use of null-subjects, but it is quite generally the case that languages whose subject agreement is in fact rich enough to license subject pro-drop use this as an *option*, grammatically speaking, not as a necessity. That is to say, it is normally the case that overt subjects may cooccur with subject agreement inflection in the verb word.

Modern Irish is an exception to this (Cf. McCloskey and Hale, 1984) -- as are certain other verb-initial languages, such as Breton (cf. Stump, 1984) and Yaté Zapotec (Van Valin, 1987). In Modern Irish, as is well known, verbal inflection for the person and number categories of the grammatical subject is incompatible with overt syntactic expression of the subject argument. Thus, in (3) below (from McCloskey and Hale, 1984:488), the independent subject pronoun *tu* may not appear in the syntactic subject position, i.e., immediately following the verb, which is inflected for second person singular conditional (CND2s):

- (3) *Dá gcuirfeá isteach ar an phost sin gheobhfá é.*
 (if put-CND2s in on the job that get-CND2s it)
 'If you applied for that job, you would get it.'

And, of course, while Irish has a form corresponding to (2) above (i.e., (4a) below), it does not have a form corresponding to (1), hence the ill-formedness of (4b):

- (4) (a) *Labhraím.* 'I speak.'
 (b) **Labhraím mé.*

In short, we have a typological difference among languages in relation to the use of null-anaphora in connection with subject agreement. In some languages, evidently the majority, the use of null-subjects is simply an option -- from the point of view of sentence grammar, in the narrow sense of the term, setting aside the discourse conditions on its use. But in certain other languages, represented in our sample by modern Irish, the use of the null-subject is obligatory where the verb is inflected for person and number of the subject. The purpose of this paper is to explore one possible explanation for this difference among languages.

1. An elementary theory of person-number agreement.

In addition to subject agreement, of the type exemplified above, it is also common for languages to have object agreement. Thus, for example, in Navajo, the verb of (5) below contains a prefix *yi-* construed with the third person object:

- (5) *ʔíí' dzaanééz yi-z-taʔ.*
 (horse mule 3o-PERF-kick)
 'The horse kicked the mule.'

As this sentence shows, the object agreement cooccurs with the overt object argument *dzaanééz* 'mule'. Thus, Navajo exhibits the same behavior in relation to subjects and objects -- in both cases, the verbal agreement morphology may cooccur with overt syntactic expression of the arguments. And in both cases, null-anaphora is possible, thus:

- (6) Yiztał.
 'He kicked him.'

Both the subject and the object are "dropped" here. And both are represented in the verbal morphology (though, of course, third person is phonologically zero within the subject person-number paradigm, as is commonly the case among languages of the world).

While null-anaphora in object position is optional in Navajo, there are languages in which it is obligatory -- just as it is obligatory for subjects in Irish. Such a language is Dogrib, a Northern Athabaskan relative of Navajo. In that language, the following pattern is to be observed (from Saxon, 1986:59):

- (7) (a) Cheko kwik'i nà-i-zhì.
 (boy gun ADV-PERF-break)
 'The kid broke the gun.'
- (b) Cheko nà-yi-i-zhì.
 (boy ADV-3o-PERF-break)
 'The kid broke it.'
- (c) *Cheko kwik'i nà-yi-i-zhì.
 (boy gun ADV-3o-PERF-break)

Here, the presence of object agreement is in complementary distribution with the presence of an overt NP argument in object position. Accordingly, (7c) is ill-formed and (7b) shows obligatory null-anaphora.

Of course, Irish does not have object agreement in its verbal system, but it does have a system of so-called "pronominal prepositions." These are simply prepositions inflected for agreement with their objects. Here again, Irish requires null-anaphora -- object agreement may not cooccur with overt expression of the object with which it is construed. Hence the ill-formedness of (8c) below:

- (8) (a) le Máire
 'with Mary'
- (b) léi
 (with:3fs)
 'with her'
- (c) *léi Máire

In this respect, Dogrib conforms to the Irish pattern in showing obligatory null-anaphora in the presence of object agreement, as the following sentences show (from Saxon, 1986:54):

- (9) (a) Johnny mbeh t'à det'q nà-i-t'a.
 (Johnny knife with duck ADV-PERF-cut)
 'Johnny cut up the duck with the knife.'
- (b) Johnny ye-t'à det'q nà-i-t'a.
 (Johnny 3o-with duck ADV-PERF-cut)
 'Johnny cut up the duck with it.'
- (c) *Johnny mbeh ye-t'à det'q nà-i-t'a.
 (Johnny knife 3o-with duck ADV-PERF-cut)

Dogrib uses postpositions instead of prepositions, but the facts of the language are identical to those of Irish in the relevant respects. The postposition may not bear object agreement in the presence of an overt argument in object position. This accounts for the ill-formedness of (9c). The well formed sentences (9a, b) illustrate the complementarity between agreement and the syntactic expression of the object as an overt NP.

Navajo, which uses postpositions in the manner of its northern relative Dogrib, differs from the latter language in permitting inflected postpositions to cooccur with overt object NPs:

- (10) (a) Akakii k'íí' t'óół y-ee yi-z-loh.
 (cowboy horse rope 3o-with 3o-PERF-rope)
 'The cowboy roped the horse with a rope.'
- (b) Y-ee yi-z-loh.
 (3o-with 3o-PERF-rope)
 'He roped it with it.'

In (10a), the object of the instrumental postposition is overt and cooccurs with object agreement. In (10b), all overt nominals are dropped. In terms of agreement morphology, the two sentences are identical.

We have seen that languages may differ according to whether they require null-anaphora in the presence of agreement morphology. In some languages, if the head of a lexical category (e.g., verb (V), or adposition (P)) is inflected for the person and number of the argument it governs, this latter argument must be non-overt in its canonical syntactic position -- i.e., null-anaphora is obligatory. In other languages, on the contrary, the governed argument may be overt -- so, null-anaphora is optional. This null-anaphora parameter yields the classification set out in (11) below, where the lexical categories are inflected for person and number of the mentioned arguments, and the notation "obl" stands for "obligatory" null-anaphora:

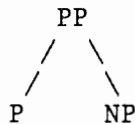
| (11) | <i>Subject</i> | <i>Object of V</i> | <i>Object of P</i> |
|--------|----------------|--------------------|--------------------|
| Dogrib | non-obl | obl | obl |
| Irish | obl | --- | obl |
| Navajo | non-obl | non-obl | non-obl |

Of these languages, only Irish shows obligatory null-anaphora in the subject function. Navajo and Irish are perfect opposites along the null-anaphora parameter (though, of course, Irish does not inflect its verbs for object agreement), while Dogrib represents a mixed system, opposing subject and non-subject. Irish represents a minority in one respect, in that it requires null-anaphora of the subject. While the sample presented here is small, it is in fact representative of languages of the world, since obligatory null-anaphora of the subject function is relatively rare.

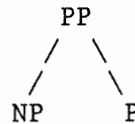
We have two primary purposes: (1) to give an elementary characterization of the distinction between obligatory and non-obligatory null-anaphora, and (2) to attempt to explain why Irish ~~requires~~ ^{requires} null-anaphora of subjects, while the other languages do not. To address the first of these purposes, we must develop an elementary theory of agreement.

Let us consider the adposition first, since this category inflects for person and number in all three of the languages. The basic structure of the Irish prepositional phrase can be represented as in (12a) below, while that of the two Athabaskan languages is as depicted in (12b):

(12) (a)

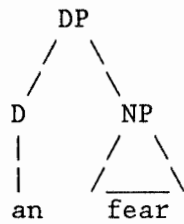


(b)



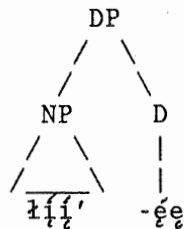
The two structures differ only according to the position of the "head" of the construction. Irish is a "head-initial" language consistently, while Athabaskan is consistently "head-final". In all other respects, the structures are identical in the three languages. In particular, in all three, the adposition (P, for preposition or postposition) governs an argument which, in tradition parlance, belongs to the category NP, subsuming not only "noun phrases" proper, but also phrases headed by pronouns and other determiners. In more recent work on the structure of argument expressions, they are held to have two "heads", one a functional head and the other a lexical head (cf. Abney, 1987). The functional head is the determiner (D); and the lexical head, if present, is the noun (N). Thus, a lexically headed argument expression is both a DP (determiner phrase) and an NP (noun phrase). For example, the Irish expression *an fear* 'the man' takes the form depicted in (13) below:

(13)



Correspondingly, the Navajo definite expression *lii'-ee* 'the (aforementioned) horse' has the structure depicted in (14):

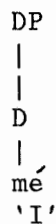
(14)



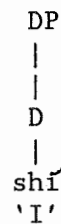
Here again, Irish is head-initial, the Athabaskan language head-final.

Although this is somewhat debatable, we will take the position here that a pronominal argument is simply a DP which lacks an NP complement (cf. Postal, 1966), as illustrated below, for Irish (15a) and Navajo (15b):

(15) (a)



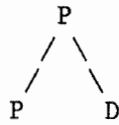
(b)



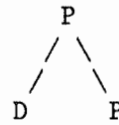
With this background, we can introduce our elementary theory of agreement. We propose that agreement is effected by means of the process of incorporation, as suggested for Irish by Armstrong (1977) and Pranka (1983), and for Breton by Anderson (1982).

According to the incorporation theory of person-number inflection, an inflected adposition, like Irish *liom* 'with me', or its Navajo equivalent *shíł* (< /shí-ł/) 'with me', is a compound formed by adjoining the pronominal element -- which belongs to the category D, by hypothesis -- to the adposition P, yielding a word of the form given in (16a) or (16b), depending upon the linear ordering of the two elements entering into the compound:

(16) (a)



(b)

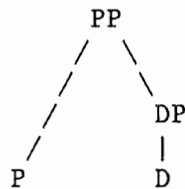


The Irish inflected preposition takes the form (16a), while the Navajo inflected postposition takes the form (16b). The inflection of other categories (e.g., the verb) would, according to this view, proceed along the same lines.

We now have an elementary theory of the morphology of person-number inflection -- i.e., we have a proposal concerning the manner in which an inflected word is formed. We must now concern ourselves with the question of how the languages we are considering come to differ in respect to null-anaphora. Why is it obligatory in some, optional in others?

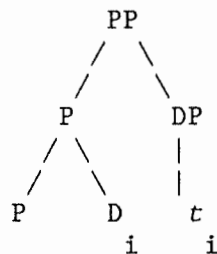
Let us consider first the behavior of adpositions in Irish and Dogrib. In both of these languages, an inflected adposition is incompatible with overt expression of the object in canonical object position. This would follow automatically if the inflection itself were the argument. And this in turn would follow automatically if the incorporation process were *syntactic* -- i.e., if it applied to a syntactic structure of the form given in (17), incorporating the pronoun -- i.e., the D -- into the verb (leaving a trace, presumably, in conformity with the general structure preservation requirement on movement rules):

(17)



Incorporation would be effected by the general transformational rule "Move Alpha" (cf. Chomsky, 1981), in its "head-movement" variant (cf. Baker, 1987). This would adjoin the pronoun (i.e., D) to its governor, the preposition (P), yielding (18) below:

(18)



This is essentially the structure of Irish *liom*; that of Dogrib *ye-t'a*, in (9b) above, is essentially the same, except for the linear order of the component morphemes, of course -- in Dogrib, as expected, the head (P) follows

the pronominal element (D). The fundamental property of (18), however, is not the ordering; rather, it is the fact that the incorporation was effected by a *syntactic* rule, leaving a trace, and utterly precluding thereby the possibility of overt expression of an argument in the basic object position in syntax.

How, then, does Navajo differ from Irish and Dogrib? It apparently does *not* differ from these languages in terms of the morphology of incorporation. Rather, it differs from them in terms of the syntax -- overt expression of the object is possible in concert with agreement. That is to say, the incorporated D may cooccur with an overt object. This would be impossible if Navajo incorporation were a *syntactic* rule, as suggested for Irish and Dogrib. Evidently, therefore, the Navajo process of incorporation must be effected by a *lexical* rule. There is no particular reason to assume that the head-movement variant of Move-Alpha cannot apply in the lexicon -- in fact, we *must* assume that it does if we are to account for the fact that the lexical and syntactic incorporation result in morphologically identical forms. The difference is that lexical incorporation cannot leave a trace, since traces result only from movement from syntactic positions, in the sense of positions within the overt syntactic projections which define the phrase structures of sentences, having both syntactic and phonological form. In Navajo, therefore, there is nothing to prevent the overt expression of arguments in the syntactic positions corresponding to the grammatical functions.

If this is so, then the status person-number inflection in Navajo postpositional phrases is different from the status of that inflection in Dogrib, or from that of Irish prepositional inflection. In Navajo, person-number inflection is "agreement" in the traditional sense. We can assume that its function is to *register* the person-number categories of the object argument -- it is not *identified* with the argument, it merely *agrees* with it. By contrast, in Dogrib and Irish, the inflection is literally *identified* with the argument -- it *is* the argument, properly speaking, since it has been incorporated from the argument position in syntax.

The foregoing constitutes an elementary theory of person-number agreement and of the observed typological variation within the system. It is appropriate now to turn to the final problem -- namely, an account of subject agreement and the contrast there between Irish and Athabaskan.

2. Subject agreement.

The two Athabaskan languages agree with respect to the use of null-anaphora for subjects -- it is non-obligatory in both languages. Assuming that the account given in the preceding section is plausible, then it is reasonable to assume that subject agreement is by *lexical* incorporation, not syntactic incorporation, in those languages. By contrast, since null-anaphora is obligatory in Irish, i.e., since subject agreement precludes overt expression of the syntactic subject, it is reasonable to assume that subject agreement is effected by *syntactic* incorporation in that language.

Let us suppose that this is the correct account of the difference between Athabaskan and Irish. While this is descriptively adequate, it is not altogether satisfactory, since it fails to reflect the fact that the Irish

phenomenon is somewhat rare, while the Athabaskan situation could not be more common. One wonders, therefore, whether the Irish behavior might not be tied to some other feature of the language. Does the linguistic type to which Irish belongs have anything to do with the fact that it requires null-anaphora in the presence of subject person-number inflection?

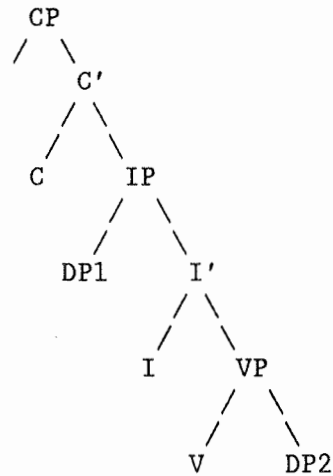
We can put the question another way. Would it be possible for an Athabaskan language, of the type represented by Navajo and Dogrib, to exhibit the Irish behavior in regard to null-anaphora of subjects? Let us speculate that it would not be possible. Why might this be?

It is well known that there is an asymmetry between the subject, say, and the object. The asymmetry derives from the fact that the subject is not *properly governed* -- in particular, it is not *lexically governed*. If the subject is not properly governed in the Athabaskan languages, then the typological position of these languages in regard to null-anaphora of subjects would follow instantly from the theory of movement. Incorporation of a pronoun (D) into the verb would leave an ungoverned trace -- violating a general condition to the effect that all traces must be properly governed (cf. Chomsky, 1981). Therefore, these languages could not use *syntactic* incorporation to effect subject person-number agreement. Only *lexical* incorporation will do. From this it follows that Athabaskan does not require null-anaphora in subject position; it *could* not require it.

This accounts for Athabaskan, assuming that our assumptions are correct. But what about Irish? Why is it possible for that language to *require* null-anaphora in the presence of subject person-number inflection?

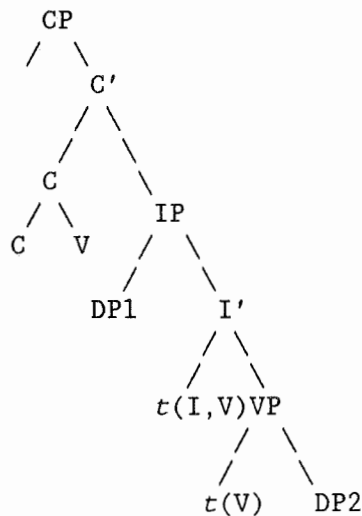
According to the line of argument we have been considering here, subject position must be *properly governed* in Irish. In fact, it must be governed by the verb. Otherwise, a subject pronoun could not incorporate into the verb without violating the above-mentioned general constraint on movement -- to the effect that traces must be properly governed. This fits in well with the analysis of Deprez and Hale, presented at the 1985 Harvard Celtic Colloquium, following in part the analysis of Welsh presented by Richard Sproat at the 1983 Colloquium, according to which the surface word order of Irish is derived by means of leftward movements of the verb into the functional categories INFL (inflection, glossed I in tree representation) and COMP (complementizer, glossed C). According to this analysis, the basic structure of an Irish verbal sentence is that given in (19) below:

(19)



The first argument here, DP1, is the subject, and the second, DP2, is the object. As is well known, Irish is superficially a VSO (verb-subject-object) language, contrary to what is suggested by the deep structure representation (19). Evidence in favor of (19) for Celtic generally is quite strong (cf. Sproat, 1985), and it will be accepted here without further comment. The surface order can be derived by means of the head-movement variant of Move-Alpha, which moves the verb, adjoining it successively to I and then to C, yielding (20) below:

(20)



In its derived position, the verb properly governs the subject. This follows partly because the category IP (i.e., the sentence, S in traditional notation, is never a barrier to government) and partly from the fact that V is not categorially distinct now from IP, due to the fact that it passed through the head of IP (i.e., through I) in its leftward journey to C), as indicated by the arrows.

Given these assumptions, a pronoun occupying DP1 position could incorporate into V at the syntactic level of representation. This would yield the desired results. Null-anaphora would be obligatory, by virtue of the syntactic movement. Hence the observed difference between Irish and the Athabaskan languages.

In the following section, I briefly examine independent evidence in favor of the notion that the subject is within the government domain of the verb in VSO languages. The evidence is drawn from Irish and makes reference to some recent work on resumptive pronoun objects in that language (Deprez and Hale, 1986).

3. On V-fronting and the governing category of the subject.

As is well known, direct relativization is obligatory for the subject, if that argument is directly subjacent to the "leniting" complementizer (symbolized *aL* by McCloskey) which connects it to the head of the relative clause, whether that complementizer is unique (as in (21a) below) or forms a chain of more than one such complementizers (as in "long-distance" relativization of the type exemplified by (21b)):

- (21) (a) an fear a dhíol *t* an domhan
'the man who sold the world' (McCloskey, 1979:5)
- (b) an t-Aire a deir siad a dúirt *t* go raibh an
cogadh thart
'the minister that they say said the war was over'
(McCloskey, 1979:17)

We assume that direct relativization is effected by the general rule Move-Alpha, applying successive cyclically in structures of the type represented by (21b). Accordingly, a "gap", or "trace" (symbolized *t*), is left in the d-structure position of the relativized argument. We will assume further that the complementizer introducing the relative clause is coindexed with the head thereof (in both direct and indirect relatives). It is by means of this coindexation that the head NP is "connected" to the relative clause (and, therefore, properly interpreted in relation to it); in the case of long-distance direct relativization, as in (21b), the entire chain of complementizers is coindexed with the head. When we make reference below to the "relevant" complementizer (normally italicized in example sentences), we mean that complementizer, coindexed with the head, which is closest to the position of the relativized argument.

By contrast, indirect relativization, we assume, does not involve movement; a resumptive pronoun appears in the position of the relativized argument, and the oblique relative complementizer, termed "nasalizing" by McCloskey (and symbolized *aN* by him), is utilized. Indirect relativization of a subject is impossible if that argument is immediately subjacent to the complementizer connecting the relative clause to the head (and coindexed with the latter). Hence:

- (22) *an fear a ndiolann sé an domhan
'the man who sells the world' (McCloskey, 1979:6)

Like the subject, the object undergoes direct relativization, as exemplified by (23) below:

- (23) (a) an scríbhneoir a mholann na mic léinn t
'the writer whom the students praise'
(McCloskey, 1979:6)

- (b) an t-úrscéal a mheas mé a thuig mé t
'the novel that I thought I understood'
(McCloskey, 1979:17)

But unlike the subject, the object may also undergo indirect relativization, as in the following:

- (24) (a) an scríbhneoir a molann na mic léinn é
'the writer whom the students praise'
(McCloskey, 1979:6)
- (b) an t-úrscéal ar mheas me gur thuig mé é
'the novel that I thought I understood'
(McCloskey, 1979:155)

A subject may of course undergo indirect relativization if it is not directly subjacent to the relevant complementizer, thus (25) is grammatical:

- (25) an fear ar mheas mé go raibh sé ann
'the man that I thought was there'
(McCloskey, 1979:142)

As expected, this has a direct relative variant in which the relativized argument is subjacent to a chain of leniting complementizers:

- (25') an fear a mheas mé a bhí t ann.

In general, indirect relativization is obligatory if a barrier of any sort intervenes between the position of the relativized argument and the relevant complementizer. Most maximal projections (CP = S', NP, PP, details aside) constitute barriers in this sense for Irish. This is not focus of our concern here, however, and we refer the reader to McCloskey (1979) for full discussion of this matter.

We turn now to a consideration of the subject-object asymmetry just exemplified. Why, we ask, is direct relativization obligatory in the case of an immediately subjacent subject (i.e., a subject not separated from the relevant complementizer by some barrier)? And why are both relativization patterns equally possible in the case of an object?

It is perhaps not surprising that indirect relativization is quite regularly observed when a barrier intervenes between the relativization site and the relevant complementizer. But with subjects, indirect relativization is *impossible* if no barrier intervenes, suggesting that the resumptive pronoun associated with that strategy cannot be "too close" to the relevant complementizer. We suspect that this has something to do with the surface VSO word order in Modern Irish tensed clauses.

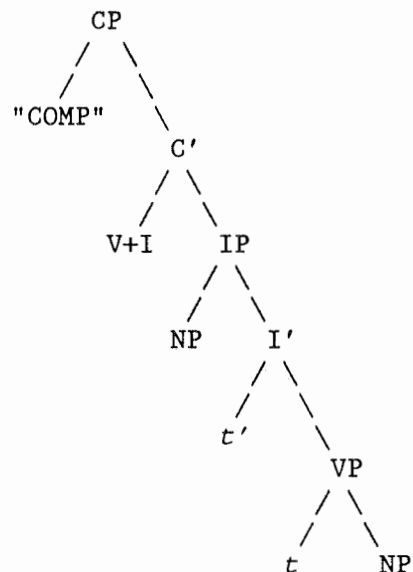
The subject position is evidently properly governed in the VSO order, and the grammaticality of sentences like (221b) supports this claim for Irish (cf. Chung, 1983, on the VSO language Chamorro; but see also Sproat, 1985, for an opposing position and a counterargument based on Welsh). Since the complementizer is proclitic to the verb, it does not seem unreasonable to suggest that the subject is within the governing category (cf. Chomsky, 1981, and elsewhere) which contains the complementizer. If this is correct, then it is quite possible that indirect relativization of a subjacent subject would violate the principle according to which a pronoun must be free within its governing category.

Sproat (1985) has argued persuasively that the VSO order observed in Irish and Welsh tensed clauses is derived by verb-fronting, from a d-structure configuration of the more familiar sort. We accept his arguments for this and propose that the movement proceeds through the INFL position (i.e., I, head of IP), terminating in the position defined by X-bar theory (e.g., as assumed in Chomsky, 1984) as the head of the complementizer system (i.e., C head of CP); the element we have been referring to as the "complementizer" is, we propose, situated at d-structure in the specifier position of the CP system, its relation to the latter being analogous (morphophonologically and structurally) to that of the proclitic article or a genitive pronominal within the nominal system.

The subject argument, as generally assumed in recent work, occupies the specifier position within the INFL system. It is said to agree with the head of INFL, a relation customarily represented notationally by coindexing. The verb acquires its inflection, and therefore subject-agreement (realized as coindexing alone, or else, as coindexing together with overt person marking, depending on the nature of the subject; see McCloskey and Hale, 1984), as a function of its movement into the head of INFL.

The s-structure of an Irish tensed clause, under the above assumptions, is as depicted in (6) below:

(26)



The lowest trace (t) is that of the verb in its original d-structure position; the intermediate trace (t') is that of the verb together with its inflection (I, head of IP), acquired through movement to INFL. In its final s-structure position, the head of CP by our assumptions (thus replacing the element C), the inflected verb (V+I) precedes the subject. This movement of the verb is presumably required by case theory, since case is regularly assigned rightward in Irish -- and in other VSO languages, as well (cf. Sproat, 1985, and references cited there, for relevant discussion and argumentation). The position designated "COMP" is the specifier position of CP, to which the various Irish complementizer elements (e.g. *aL*, *aN*, *go*) are assigned.

Assuming the s-structure (26), we can say with relative confidence why it is that the object argument permits both direct and indirect relativization, in cases where "COMP" represents the relevant complementizer.

First, direct relativization is possible because no barrier intervenes between the object position and the relevant complementizer in (26), under the prevailing view that IP and VP are not barriers (cf., for example, Chomsky, 1984, where IP is simply not a barrier inherently, and VP barrierhood is circumvented by the possibility of VP-adjunction in the course of movement).

And second, indirect relativization is possible because the resumptive pronoun appearing in that construction is free in its governing category. Although the resumptive pronoun is referentially linked to the head of the relative clause, and therefore to the relevant complementizer, the latter is in CP, while the resumptive is in IP. The IP is the governing category of the object argument, since it is the IP which satisfies the defining criteria of that structural domain:

- (27) The governing category GC of A is the minimal category:
(i) which contains A, the governor of A, and a subject;
and (ii) in which there is a possible indexing compatible with
the Binding Theory (i.e., such that an anaphor is bound in GC
and a pronoun is free in GC). (Modified from Chomsky, 1984)

Where the object corresponds to A in (27), its governing category is clearly IP, assuming that its governor is the trace of V and that the NP in specifier position of IP is a subject, as is surely the case. Furthermore, if the subject and the object are differentially indexed, then requirement (ii) of (27) is also met, since the object is free in GC under that condition. On the other hand, if the object were coindexed with "COMP", as would be the case if it were a resumptive pronoun, it would still be free in its GC, since "COMP" is external to that domain. The resumptive would not, therefore, violate condition B of the Binding Theory (i.e., the condition requiring that a pronoun be free in its governing category; cf. Chomsky, 1981).

The situation is somewhat more complicated in the case of the subject. There is, of course, no mystery as to the reason why direct relativization is possible -- no barriers separate the subject from "COMP". The question is rather this: Why is indirect relativization impossible?

If we take IP to be the governing category of the subject, then indirect relativization ought to be possible; and IP is a candidate for the GC, since the requirements of (27) are all met there. Coindexing with "COMP" -- which we assume to be the mechanism which expresses the referential dependence of a resumptive pronoun on the head of the relative clause -- would not violate the Binding Theory, since "COMP" is external to IP.

We have, somewhat obliquely, been assumed that the Binding Theory is what is at work here. This may be incorrect, of course, since the binder at issue, i.e., "COMP", is not in an argument position -- it is an A-bar binder and is therefore irrelevant to the Binding Theory as generally understood, regardless how "close" it is to the bound argument. We will persist, however, in this possibly misguided line of thought and assume that the Binding Theory, and the notion governing category, are implicated in some way. If so, then IP cannot be the governing category of the subject, not in the relevant sense, at least.

The structure set out at (26) above, supposing that to be the correct structure for Irish tensed clauses, reveals another candidate for the office of GC for the subject, namely, CP. The governance of the subject is, in fact, ambiguous in this structure, since both t' and V+I stand in the relation of governor. The relations involved are not unlike those in English clauses of the type represented by (28) below:

- (28) The women like their children.

Here, the NP *their*, in the specifier position of the object NP, is governed both by the verb *like* and by the noun *children*, though perhaps only "improperly". In this English case, the governor relevant to the Binding Theory (at least insofar as condition B is concerned) is the noun, not the verb. If this observation were extended straightforwardly to the Irish case, then t' , not V+I, would be the relevant governor, making IP, not CP, the governing category. This would give the wrong result, as we have seen.

But the Irish structure at issue here is not directly comparable to the English one. There is an essential difference. In (26) the contending governors of the subject are *one and the same element*, i.e., the inflected verb (V+I) and its trace (t'). Moreover, the subject is coindexed with these governors, by virtue of agreement. This is a special circumstance, we suggest, and we propose that the governor of the subject -- the *proper* governor, since it has lexical content -- consists in the elements of the chain formed by verb movement from I (the head of IP) to C (the head of CP). Since, according to (27), the governing category of A must contain its governor, if A is the subject, then it follows that its governing category must be CP (cf. Borer, 1(2484, for the intellectual origins of this aspect of our analysis).

Now let us make the following further assumption: When CP is a governing category (by virtue of verb-movement), the Binding Theory applies within it in the *ordinary* manner, without regard for the usual distinction between A-bar and A-binding. In this conception of the matter, we depart from Aoun (1(2481), while accepting what we take to be the the essential spirit of that work -- i.e., the idea that the conditions of the Binding Theory constrain both sorts of binding. Our position differs in that we suppose that the A/A-bar distinction is simply obliterated in the case of verb-movement into the head of CP.

With these assumptions, we can now explain the impossibility of indirect relativization of subjacent subjects in Irish. A subject resumptive pronoun in the upper NP position in (27) would, if coindexed with "COMP", violate condition B of the Binding Theory (cf. Borer, 1984, for an analogous account for Hebrew).

The above scenario accounts for the facts as we understand them. However, there are aspects of it which leave us somewhat uncomfortable. We are not sure, for example, that we really have an explanation for the behavior of the object under relativization. Although both options (direct and indirect relativization) are *possible* under our account, it is not clear why both should be utilized, particularly in view of the fact that other similar languages (e.g., Welsh; cf. Harlow, 1981) exhibit just a single variant -- that corresponding to Irish direct relativization. Moreover, it is not clear why our reasoning concerning the subject should not apply equally well to the object.

The governor of the subject, we have claimed, is defined as the chain formed by the verb in its upward migration through INFL and into the head of CP; and, as a consequence, the latter category is the GC of the subject, we have argued. By the same reasoning, however, CP is also the GC of the *object*. And if this is so, then only direct relativization should be possible for that

argument, just as it is the only possibility for the subject. To be sure, the fact that the subject is coindexed with the inflected verb (and is thus in a special relationship therewith) might possibly justify distinguishing the two GCs in the manner suggested above. But it is by no means obvious that this should be so, and we must give consideration to the alternative according to which the subject and object share the identical governing category, i.e., CP.

Under this alternative conception of the relevant GCs, we are left with the problem of explaining the fact that the object argument may be relativized indirectly and, therefore, be represented by a resumptive pronoun.

In this connection, we cannot resist the temptation to relate this phenomenon to another well-known fact of Irish -- namely, the idiosyncrasy of that language that object pronouns regularly (though not obligatorily) extrapose leftward from their basic VP-internal position, giving, for example, (29a) as a preferred variant of (29b):

- (29) (a) Chonaic sé anuraidh í.
'He saw her last year.'
(b) Chonaic sé í anuraidh.

We would like to suggest that direct relativization applies to an object in its d-structure position, i.e., the position in which it is immediate sister to the verb (or to its trace, as in ((29b) above). This is obligatory, since the GC of the object is the CP, and indirect relativization would result in a violation of condition B of the Binding Theory, just as would indirect relativization of a subject.

A postposed object, on the other hand, might conceivably permit indirect relativization. This possibility would at least relieve our discomfort somewhat, since it would relate the behavior of objects under relativization to another property of Irish which is equally worthy of note. It is reasonable to assume that postposed objects are adjuncts (perhaps to the VP node), rather than immediate sisters to the verb. We would further propose that adjuncts, not being properly contained in the VP, do not have a governing category in the same sense as do arguments -- they do not require lexical government (the notion "lexical government" being correlated with the direct assignment of a theta role by a governor).

We have proposed above that the governing category for the subject extends to CP, since it is this category that contains the lexical governor and thereby conforms to (27). The CP is also the governing category of the d-structure object, by the same reasoning. On the other hand, if lexical government is not required an adjunct, the trace of the verb will qualify alone as its relevant governor, and its governing category will then be IP, since, with respect to the adjunct, that is the minimal category within which all requirements of (27) are met. And if this is so, as we will assume, then we can account for the fact that objects in Irish allow indirect relativization -- the resumptive pronoun, an adjunct, is not bound in its governing category.

On this view of the matter, Irish behaves as expected with respect to relativization; the observed surface forms are exactly as expected. The sole language specific property being the extraposition, i.e., adjunction, of pronominal objects.

This analysis makes a prediction, of course. It predicts that indirect relativization of an object will always show an extraposed resumptive pronoun (where it is possible to determine that, i.e., where overt material follows the d-structure object position). This prediction is generally borne out, but there are counterexamples -- e.g., the following, noted by Sells (1(2484) in his detailed study of resumptive pronouns:

- (30) an rud ar choinnigh siad é ceilte orainn
'the thing that they kept hidden from us'
(cf. the following, with evident extraposition:
an rud ar choinnigh siad ceilte orainn e)

The resumptive pronoun in (30) is evidently not postposed. However, we would claim that it this does not mean, necessarily, that it is not an adjunct. The process of adjunction does not, in and of itself, imply leftward extraposition -- adjunction carries with it no implication in regard to linear ordering. The latter is a matter of linearization in phonological form. While linearization in final position is preferred, it is not the only possibility, as the following examples (from notes by James McCloskey) illustrate:

- (31) (a) Thug sé é do Shéamas i mBoston anuraidh.
(b) Thug sé do Shéamas é i mBoston anuraidh.
(c) Thug sé do Shéamas i mBoston é anuraidh.
(d) Thug sé do Shéamas i mBoston anuraidh é.
'He gave it to James in Boston last year.'

We conclude from this that the observed linear position of an object resumptive pronoun does not reflect on its status as an adjunct. And our overall conclusion concerning Irish relativization is this: Direct relativization is obligatory for subjacent arguments, indirect relativization being required in all other circumstances (i.e., for arguments which are not subjacent and for elements in A-bar positions).

If obligatory null anaphora in subject position is dependent upon that position being governed, as it evidently is in Irish (and certain other VSO languages), then we must assume that the rarity -- perhaps absence altogether -- of obligatory null-subjects in other types of languages is due to the circumstance that the verb does not govern the subject in those languages. In particular, Athabaskan languages, we have assumed, could not exhibit obligatory null anaphora in subject position, because the subject is not governed -- i.e., not properly governed. But this is not at all obvious. In fact, there is some reason to suspect that the subject in SOV languages with rich verbal morphology is in fact within the governing domain of the verb. At least, the possibility must be entertained. In the following section, the typology of "relational preverb" constructions (resulting from the incorporation of

postpositions; cf. Craig and Hale, 1987) is briefly discussed, and a plausible explanation of this typology is suggested in relation to the governing domain of the verb in polysynthetic, and semi-polysynthetic, languages.

4. On the typology of relational preverb constructions in relation to government by the verb.

The typological variety which can be observed among languages of the world in relation to the phenomenon we are calling the "relational preverb construction" is constrained, in part at least, by considerations of case and government, such as those we have discussed above. Thus, we can assume that no relational preverb construction can exist unless the derived verb governs the PV-object. In other words, the head-movement variant of Move-Alpha cannot apply to incorporate a P into a verb word unless the target verb stands in exactly the right structural relation to the source PP -- essentially, the verb must govern the latter. Given the appropriate formal characterization of incorporation (abbreviated here, but cf. Baker, 1986, 1987), this constraint on the typology of relational preverb constructions follows from general principles of movement (trace theory) and government and need not be stipulated for this construction in particular. Thus, it will follow without stipulation that a relational preverb cannot be construed with a PV-object in a different clause from its host verb, or with a PV-object located in a position which the verb does not govern; and so on.

All of this, of course, is open to question. It remains to be seen whether the predictions of the Move-Alpha theory of relational preverbs is empirically correct. In this connection, let us review briefly some of the relational preverb categories attested in the languages we have considered.

(32) *Relational Preverb Categories*

(a) DATIVE:

- i) Goal, Benefactive (BEN): Rama *ba-*;
Winnebago *gi-*, *kra-*; Navajo *0-aa-*;
Nadeb *ha-*.
- ii) Possessive (POSS): Winnebago *gi-*, *kra-*.

(b) SPATIAL:

- i) Locative (LOC, INESSIVE, SUPRAESSIVE, etc.):
Rama *su-*; Winnebago *o-*, *a-*;
Navajo *0-ii'-*, *0-k'i-*; Nadeb *ga-*, *ba-*, *ya-*.
- ii) Path (ALLATIVE, ILLATIVE, ABLATIVE, ELATIVE etc.): Rama *ka-*; Navajo *0-iih-*,
0-ts'a-.

(c) INSTRUMENTAL: Rama *yu-*; Winnebago *i-*;
Navajo *0-ee(-)*; Nadeb *ma-*.

(d) COMITATIVE: Rama *yu-*; Navajo *0-l(-)*

This is a rather restrictive inventory of relational categories, and the fact that it is so restricted bodes well for the Move-Alpha account of them, since that account is maximally restrictive, limiting incorporation to structures in which a derived verb will govern its PV-object.

However, there are within this array some categories which one might, *a priori*, class as counterexamples, since they belong to the type commonly termed "adjuncts." These include the benefactive, the instrumental, and the comitative. If these are in fact adjunct PPs in underlying structure -- i.e., adjoined to VP rather than contained within VP -- then, technically at least, it should not be possible to incorporate P into the V head of VP. This follows, since the noun phrase thus "liberated" -- to wit, the derived PV-object -- would not be governed by the verb and, therefore, in the absence of any corrective principle, it would not come to bear the object relation to the verb, contrary to the observed facts in the matter.

There is, as a matter of fact, some reason for concern here, since certain alleged adjuncts do exhibit the behavior expected of them. It is sometimes suggested (cf. Bresnan, 1982) that the English pseudo-passive -- as in *This bed was not slept in last night* -- is made possible by virtue of reanalysis, involving (abstract) incorporation of the preposition into the verb. It is generally only L-selected PPs which can undergo this reanalysis, evidently:

(33) (a) ??John was talked for last night. (BEN)

(b) ??This cane is seldom walked with. (INST)

(c) ??I am seldom dined with. (COMIT)

Assuming that these sentences are ill-formed, it seems reasonable to attribute their ill-formedness to the fact that the PPs in them are adjuncts. They are certainly not "arguments" of V, in the normal sense -- i.e., they are certainly not L-selected by V. And it is quite possible that they are not sisters to V either. If not, then they are presumably adjoined to VP (if not higher up) and are therefore beyond the government domain of V (cf. Chomsky, 1986a, b). Hence, reanalysis is impossible here, since the NP object of P would, when shed of P, be ungoverned and, consequently, could not bear the necessary grammatical relation (object) to the verb. The ill-formedness of the passive follows, *either* from the fact that the trace of NP-movement is ungoverned under the illicit reanalysis, *or else*, assuming no reanalysis, from the fact that the trace of NP-movement is case-marked (by P), violating a general condition on case-chains (cf. Chomsky, 1986a).

Let us assume, tentatively, that this scenario is correct for English. Why, then, do these categories (benefactive, instrumental, comitative) enter into fully well-formed relational preverb constructions? We believe that the answer to this question must be formulated in terms of the typological position occupied by the languages which employ relational preverbs. Although we must be somewhat tentative in this regard, we feel that it is reasonably safe to say of these languages that the syntactic projection of the category V is not separate from that of the functional category INFL. Thus, for example, in Winnebago, Navajo, and Rama, verbal inflection is thoroughly integrated into the verb word. Assuming that this is a fundamental property of verbal

projections in the syntax of these languages, in the sense that it is visible at d-structure, then it follows that the sentence is a projection of V (as well as of INFL), and there is no VP as a distinct maximal projection within the sentence. For Nadeb, evidence concerning the category INFL is not available to us. But the fact that that language has OSV word order indicates that its sentences are also projections of V -- at least, the language clearly does not have a VP which excludes the subject, assuming its OSV-order is basic. This characteristic -- having S as a projection of the category V -- is quite possibly the unmarked case for verb-final languages (cf. Fukui, 1986; Speas, 1986).

If this typological characterization is correct, then the well-formedness of relational preverb constructions involving benefactives, instrumentals, and comitatives follows straightforwardly from the fact that these categories cannot be adjuncts in the relevant languages, since they must be contained within the syntactic projection of the verb. They are, therefore, governed by the latter, under the appropriate definition of the government relation (e.g., that developed in Chomsky, 1986b).

We should mention, however, that there is one construction type which remains a challenge to the Move-Alpha theory of relational preverbs, and that is the possessive use of the dative preverb in Winnebago, particularly in sentences of the type represented by (25d) above. There, the possessive use of the dative occurs twice, and one of the possessor arguments is (semantically) contained in the other. This cannot be a straightforward case of Move-Alpha, clearly; unfortunately we will have to postpone to another time a study of this class of cases.

Finally, we should also mention that there is, in the face of it, a problem with our proposal to the effect that the verb-final languages we have been considering project the verbal category to the sentence level. This would, per force, bring the subject under the governance of the verb. However, subjects (i.e., d-structure subjects) are notoriously resistant to incorporation (cf. Baker, 1985, 1986, 1987) -- but, if the subject is governed by the verb, it should incorporate into it without any difficulty whatsoever. We must assume, therefore, that some additional principle prevents subject incorporation. Most likely, the subject is extracted and adjoined to the maximal projection, perhaps to satisfy the requirement embodied in the so-called "extended projection principle" (cf. Chomsky, 1986a, and elsewhere), if this is taken to mean that each sentence consists in a subject paired with a predicate (cf. Rothstein, 1983).

(To be continued)

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