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I-Subjects

In this article I will address a number of questions concerning subjects. In particular:

1. What is the nature of the superscripting system proposed in Chomsky (1981)? Can it be simplified?

2. What is the relation—if any—between the insertion of an expletive empty category in the subject position in ergative constructions (in the specific sense of Burzio (1981)), or unaccusative constructions (in the sense of Perlmutter (1978)), in null-subject languages and the insertion of pleonastic subjects such as *there* in English and *il* in French?

3. What determines the distribution of pleonastic subjects?

4. Do sentences have to have subjects (the Extended Projection Principle, Chomsky (1982))? Why?

5. The correlation referred to as "Burzio's generalization" roughly states that all accusative-assigning verbs must have a θ-subject. Is this generalization descriptively adequate? Can it be derived from other principles?

As a step toward answering these questions, I will propose the following rule of Universal Grammar:

(1) Coindex NP with Infl in the accessible domain of Infl.[1]

The NP in (1) will be named *I-subject*. A large part of this article is devoted to motivating the rule in (1). In another part I explore the nature of this rule and the way in which it interacts with other systems of the grammar. This interaction will be shown to result in a simplified grammar that is both empirically and theoretically desirable.

The article will be organized as follows. In sections 1 and 2 I will outline the nominative Case assignment system proposed in Chomsky (1981) (henceforth, LGB) and offer some pros and cons. In section 3 I will explore the implications of a system of free superscripting, showing that it can achieve some of the effects achieved in the LGB system by a special superscripting rule. In section 4 I will suggest that the superscripting

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[1] By *the accessible domain of Infl* I intend the following:

(i) α is in the accessible domain of Infl_i iff Infl_i c-commands α and there is no β_j, β_j I-subject of Infl_j, such that Infl_i c-commands Infl_j and Infl_j c-commands α.

For additional discussion, see section 6.

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system can be replaced by subscripting, thus unifying the indexing system used for nominative Case assignment with the indexing system used for the binding conditions. I will explore the implications of this proposal for the binding conditions, and I will show that the distribution of expletive elements can be explained using a unified indexing system. In section 5 I will present some questions concerning empty pleonastic elements and sketch a system of identification for empty categories. In section 6 I will introduce rule (1) as a natural consequence and consider its implications for the Extended Projection Principle and Burzio's generalization. In section 7 I will consider the consequences of the analysis with respect to various grammatical constructions such as infinitives, gerunds, NPs, and small clauses.

1. Nominative Case Assignment: The LGB Account

Rizzi (1980, published 1982) observes that so-called null-subject languages exhibit a clustering of properties that are absent in non-null-subject languages. In particular, I will be concerned here with empty pleonastic subjects and free inversion of the subject. These constructions, as well as the simple pro-drop cases (by which I mean cases of empty pronominal subject) are exemplified in a variety of languages in (2)–(5):

(2) *Pro-drop*

a. 'Ani 'axalti 'et ha-tapu'ax.[2] — Modern Hebrew
I ate-1-sg acc the-apple

b. 'Axalti 'et ha-tapu'ax. — Modern Hebrew
ate-1-sg acc the-apple

c. I ate the apple. — English

d. *Ate the apple. — English

(3) *Pleonastic subjects in "raising" and extraposition constructions*

a. Nir'a she-Itamar shuv me'axer. — Modern Hebrew
seems that-Itamar again late

b. It seems that John is late again. — English

c. Margiz 'oti she-Itamar tamid me'axer. — Modern Hebrew
annoys me that-Itamar always late

d. It annoys me that John is always late. — English

(4) *Pleonastic elements in "ergative" constructions* (in the sense of Burzio (1981)) or "unaccusative" constructions (in the sense of Perlmutter (1978))

a. Il est arrivé un garçon. — French
'There arrived a boy.'

b. Nishma cilcul pa'amon. — Modern Hebrew
was-heard ringing bell
'Bell-ringing was heard.'

[2] I will not discuss here the precise status of the accusative marker *'et* in Hebrew. It suffices to say that this marker occurs chiefly in front of definite direct objects. For the sake of simplicity I will assume that it is a phonetic realization of a set of features, one of which is definiteness, another of which is accusative Case. The accusative marker will play a role in discussing violations of Burzio's generalization in section 3. Other analyses of this marker are possible (see, for example, Gil (1982)).

(5) *Subject Inversion*

a.	*Telephoned John.	English
b.	??There telephoned three men/*John.	English
c.	Ha telefonato Gianni. has telephoned Gianni 'Gianni telephoned.'	Italian

Clearly, null-subject languages exhibit two properties that seem absent in non-null-subject languages: first, the possibility of leaving the [NP,S] position empty, and second, a process that marks a postverbal NP as nominative, as in (4b) and (5c).

Chomsky (1981), developing ideas of Jaeggli (1980, published 1982), suggests that a unified account of these two effects can be given if we assume that the rule attaching agreement (Agr) to the verb (essentially the rule of Affix Hopping of Chomsky (1957)) can apply either in the syntactic component of the grammar or in the phonological component. Different grammars may parametrize over this option. For instance, this rule, whose approximate formulation is given in (6), is restricted for English and French as in (7):[3]

(6) *Affix Hopping (R)*

Agr V $\rightarrow$ [$_{VP}$ V,Agr]

(7) R may not apply in the syntax.

Assuming now that nominative Case is assigned under government by the Agr node, and that this assignment takes place at S-Structure, a partial explanation can be offered for the paradigm in (2)–(5). Consider first the treatment of simple pro-drop cases in the LGB system, such as in (2) (only glosses are given). As (6) may apply in the syntax, the possible representations of (2a) at S-Structure are (8a–b):

(8) a. I Agr [$_{VP}$ ate the apple]

b. I [$_{VP}$[ate,Agr] the apple]

Representation (8a) leads to a well-formed output. The Agr node governs the [NP,S] position at S-Structure and it can be assigned nominative Case. Representation (8b), on the other hand, cannot yield a grammatical output: *I* in the [NP,S] position is not governed by Agr at S-Structure and consequently cannot be assigned Case. Since every lexical NP must be assigned Case,[4] this derivation is ungrammatical. Now consider the following representations, corresponding to (2b):

[3] The statement of the pro-drop parameter in Chomsky (1981) is in fact slightly different. It does not restrict the application of R in non-pro-drop languages. Rather, it permits it in the syntax of pro-drop languages, thus making an implicit claim about markedness. For reasons that are embedded in the theory of interlanguage variation suggested in Borer (1983), the restrictive statement in (7) is preferred. See also Hyams (1983) for arguments that pro-drop grammars are the unmarked option. For the purposes of this article, these two statements are empirically equivalent.

[4] This generalization is usually referred to as the *Case Filter*. Chomsky (1981) attempts to derive certain effects of the Case Filter from another principle: the *visibility hypothesis*. In section 4 it will become clear that the visibility hypothesis is not compatible with the analysis in this article. See also footnote 20.

(9) a. [e] Agr [$_{VP}$ ate the apple]
b. [e] [$_{VP}$[ate,Agr] the apple]

Given the contextual definition of empty elements in Chomsky (1981), any [e] may be either a variable, an anaphor, or a pronominal anaphor (PRO). However, each one of these possibilities will lead to ungrammaticality in the case of (9a). Rizzi (1982) shows that Agr is not a proper governor.[5] But both a variable [e] and an anaphor [e] are subject to the Empty Category Principle given in (10):

(10) [e] must be properly governed.[6]

Thus, [e] in (9a) cannot be a variable or an anaphor. Consider now the possibility that the empty category in the [NP,S] position in (9a) is the pronominal anaphor PRO. It follows from the binding conditions that PRO cannot be governed, but in (9a) the [NP,S] position is governed by Agr, and it cannot be PRO. Thus, the representation in (9a) cannot yield a well-formed output. This problem does not arise in (9b). Following the application of R in the syntactic component, the [NP,S] position is not governed at S-Structure, which is the level at which the binding conditions are relevant. Thus, this position may be occupied by PRO. Note, however, that the situation in (9b) can never arise in non-null-subject languages. Since Agr always governs the subject position at S-Structure in these languages, that position can never be occupied by the pronominal anaphor PRO, and ungrammatical pro-drop cases in these languages are never generated, as is demonstrated by (2d).

Returning now to the assignment of nominative Case in (4b) and (5c), I assume here, and throughout this article, that agreement with the verb is a manifestation of nominative Case. In fact, as will become evident, I make an even stronger claim: I assume that an NP that does not agree with the verb cannot be nominative (note, however, that it does not follow that all NPs that agree with the verb must be Case-marked). Clearly, any other stand on this issue forces its supporters to develop a mechanism that will ensure the right agreement between the verb and a given NP, which will, then, have properties similar to those of the system proposed here.

In order to capture the assignment of nominative Case to postverbal subjects, Chomsky suggests that at D-Structure a rule of superscripting results in the cosuperscripting of the [NP,S] position and Agr. He further suggests (11) as the precise formulation of nominative Case assignment:

[5] Picallo (1984) indicates that Rizzi's claim might be too strong and that Agr is a proper governor in some cases, but not in others.

[6] I assume here the following definition of proper government:

(i) α properly governs β iff α governs β and
a. α is coindexed with β; or
b. α is [+V].

For discussion of this definition, see Borer (1983). Definition (i) will suffice for the purposes of this article, but for extensive work on proper government as well as an attempt to derive the generalizations in (ia–b), see Aoun (1981), Kayne (1981), Pesetsky (1982), and Lasnik and Saito (1984).

(11) Assign nominative Case to an N that is both governed by Agr and cosuperscripted with it (applies at S-Structure).

Nominative Case is now assigned to (5c) in the following way. At D-Structure, following the cosuperscripting of the [NP,S] position with Agr, the representation of (5c) is as in (12):

(12) $NP^i\ Agr^i\ [_{VP} \ldots]$

Following the NP-postposing, the following configurations are possible at S-Structure:[7]

(13) a. $[e]^i\ Agr^i\ [_{VP}[_{VP} \ldots]\ NP^i]$ (R did not apply in the syntax)
b. $[e]^i\ [_{VP}[_{VP}\ [V+Agr]\ \ldots]\ NP^i]$ (R applied in the syntax)

[7] Chomsky crucially assumes that the VP node created by adjunction blocks government from Agr. As a result of this, movement of Agr to the VP is necessary for nominative Case assignment. For a different approach, see May (1985). Under May's approach, the assignment of nominative to postverbal ergative subjects and postverbal postposed subjects cannot be unified, since movement of Agr is necessary for the former, but not for the latter. Under this approach, therefore, the fact that both phenomena are typically found in the same grammars is rendered mysterious. May further argues, contrary to what is assumed in LGB (as well as in Rizzi (1982), Jaeggli (1982), Borer (1983)) that a head node may not govern the position adjoined to its maximal projection. May crucially relies on the ungrammaticality of extraction from postposed positions in English to support his point. (i) is the relevant case:

(i) a. There arrived from India three men.
b. *Which men$_i$ did there arrive from India [e]$_i$?

The ungrammaticality of (ib) follows, May argues, if the postposed position is not properly governed by the head verb. On the other hand, May accounts for the grammaticality of extraction from postverbal (but not preverbal) positions in Italian (and similarly, presumably, in Hebrew) by adopting Path Theory (modified from Pesetsky (1982)), showing that extraction from postposed positions does not create a violation of the Path Containment Condition (PCC), whereas extraction from a preverbal position does. Since in Pesetsky's system the PCC is designed to replace the ECP, clearly government—or the absence of it—is no longer relevant for ruling out (ib). Thus, the contrast between (ib) and the corresponding grammatical extractions in Italian does not provide an argument for nongovernment of the adjoined position by the head. Note at this point that for this article it is only crucial that nominative Case assignment to postverbal positions in sentences such as (13) utilizes the same device available for nominative assignment for ergative subjects in the VP. The question of whether this assignment relation also licenses extraction (i.e. proper government) is a separate issue, which must be determined by the status of the ECP, with respect to which this article is neutral.

Two more arguments might be cited favoring May's position. The first is that a direct object may not serve as an antecedent to a postposed subject anaphor. The second is the fact that certain cliticization phenomena (*ne*-cliticization; see Burzio (1981), Belletti and Rizzi (1981) for extensive discussion) distinguish between ergative subjects and postposed subjects. A complete discussion of these cases is outside the scope of this article. However, I do not believe that these phenomena constitute conclusive evidence. In Borer (1983) I argue that when mutual c-command holds between two arguments, the well-formedness of anaphoric relations is determined by a thematic hierarchy of sorts, supplying, so to speak, the means to break a tie. It follows that a direct object may not serve as the antecedent of the subject in postposed constructions. As for *ne*-cliticization, it stands to reason that since cliticization is a semimorphological process, it would be sensitive to lexical selection, favoring inherent VP material and thus creating the proper distinction between ergative subjects and postposed ones. Some direct evidence that adjoined positions are governed by the head is provided in Borer (1983).

I should nevertheless point out that although I assume here that rule R is the means by which Infl can govern a postverbal subject, this assumption—and the accompanying structures—is by no means the only logical possibility compatible with the main proposal I wish to make. As will become clear, the government or nongovernment of the [NP,S] position does not play any role in my system, and as a result, a structural modification that would enable Infl to govern a postverbal position, but would not involve Infl lowering, is easy to imagine. For example, a process of reanalysis between Infl and V would, presumably, allow Infl to govern material in the VP in a similar fashion, while not making use of the assumption that heads govern adjoined positions. The preference for one possibility over the other, although an empirical issue, cannot be determined on the basis of the data presented in this article alone.

(13a) is ungrammatical, since nominative Case cannot be assigned to the postverbal NP. Although it is cosuperscripted with Agr, it is not governed by it. (13b), on the other hand, is grammatical. Agr is attached to the verb in the syntax, and at S-Structure it governs the postposed subject as required.

In order to account for the assignment of nominative Case to postverbal subjects in ergative constructions, as in (4b), Chomsky assumes yet another rule of cosuperscripting. Assuming, following suggestions of Perlmutter (1978), Burzio (1981), Borer (1980), and others, that in sentences such as (4b) the postverbal argument is base-generated in place (rather than postposed), it is not possible to appeal to cosuperscripting of the [NP,S] position and Agr as a way to achieve the cosuperscripting of Agr and the postverbal NP, which is needed for the assignment of nominative Case. Thus, it is suggested that an expletive PRO that is cosuperscripted with the ergative subject is inserted into the [NP,S] position. Since the [NP,S] position is already cosuperscripted with Agr by the superscripting rule suggested above, the representation is only well-formed if the expletive PRO bears the same superscript as Agr. It follows that the postverbal NP also must bear the same superscript as Agr, and thus it can be assigned nominative Case when R applies in the syntactic component.

2. Nominative Case Assignment and Pleonastic Subjects

2.1. There *and* Il

The main advantage of the system sketched above is its unified treatment of nominative Case assignment in the VP in the languages that are referred to as the null-subject languages. However, it clearly presents some problems and gives rise to some puzzling questions. Consider the superscripting system. On the one hand, this system introduces a second method of indexing that is distinct from the indexing used for the purposes of the binding conditions. On the other hand, the unification of the two indexing systems is necessary for the purposes of some grammatical operations.[8] Clearly, unifying the indexing systems can constitute a significant simplification of the grammar.

Consider now the rule that cosuperscripts an expletive empty element in the [NP,S] position with a postverbal NP in ergative constructions—no doubt a problematic rule, since it is construction-specific. Defenders of this rule may argue that it is a rather general rule and that the same rule is independently needed in non-null-subject languages to cosuperscript *there* and the postverbal NP or French *il* and the postverbal NP in (14a–b) (and compare with the ergative configuration in (15)):[9]

[8] An example of such an operation is the notion BIND, which serves as a foundation for chain formation. See Chomsky (1981) for discussion. For a discussion of the conceptual advantages of collapsing the two indexing systems, see Safir (1982; 1985).

[9] I am assuming Stowell's (1978) analysis of *there* insertion. Stowell assumes that *there* constructions are "ergative" in nature: the understood subject is base-generated in the postverbal position and is then optionally raised to the [NP,S] position. In the absence of such raising, the pleonastic element *there* is inserted, to prevent the appearance in S-Structure of an empty [NP,S] position.

(14) a. There^i are three cats^i in the garden.
b. Il^i est arrivé trois garçons^i.

(15) [e]^i nishma cilcul pa'amon^i.
was-heard ringing bell

Note, however, that the logic behind the superscripting in (14) is quite different from the logic behind the superscripting in (15). The difference between these two classes of cases immediately becomes apparent when one compares their respective structures at S-Structure:

(16) a. there^i Agr^i [$_{VP}$ V NP^i] (R may not apply in the syntax)
b. il^i Agr^i [$_{VP}$ V NP^i]
(17) [e]^i [$_{VP}$ V + Agr^i NP^i]

In (16) cosuperscripting with *there* or *il* would be required in order to bring about the formation of a chain between the pleonastic subject and the postverbal, cosuperscripted NP. Without the formation of such a chain, so goes the argument, the postverbal NP cannot be assigned Case, since it is not governed by Agr. (I assume at this point that in constructions such as (16a) the verb *be* is not a Case assigner. I will return to this point, as well as to the *il* constructions, below.) Crucially, there is no direct Case assignment in the postverbal position, even following the formation of such a chain. Rather, Case is essentially transmitted to the postverbal NP by the element that is in the Case position. Such transmittal, however, is not necessary for (17), where nominative Case is assigned directly to the postverbal subject, following the obligatory application of R in the syntactic component. Thus, whereas in (16) the chain is formed for Case transmittal, in (17) [illegible]plies so as to enable Infl to assign nominative Case directly, to make the postverbal subject, so to speak, accessible to Infl. Thus, the equivalence between these two classes of cases is not immediately apparent. Can this equivalence be strengthened? Put somewhat more generally, can the system of superscripting and nominative Case assignment sketched above provide a real insight into the distribution of pleonastic subjects and characterize what they have in common with expletive empty subjects?

2.2. *The Distribution of Pleonastic Subjects*

The availability of pleonastic subjects in non-null-subject languages in the LGB system follows from the existence of restriction (7) on their grammars. Since the [NP,S] position in these languages must be filled by a lexical element, there must exist a pleonastic element to fill it when it is not assigned a θ-role.[10] It is harder, however, to derive the

[10] When the position is assigned a θ-role, it must be filled by a referential expression, by the θ-Criterion. See Borer (1980), Chomsky (1981) for discussion. Note that in a system assuming the existence of an empty pronominal *pro*, the availability of pleonastic subjects in non-null-subject languages no longer follows from (7), since *pro* may be pleonastic and may be governed. As will become clear, I propose that the distribution of null subjects is entirely divorced from rule R and is determined instead by a system of feature identification. See section 5 for discussion.

absence of such pleonastic elements in null-subject languages. In fact, one expects such pleonastic elements to exist optionally and to fill the subject position when R does not apply in the syntax and the derivation is parallel to the derivation in non-null-subject languages. In other words, one expects the optionality of pleonastic subjects to pattern with the optionality of definite pronominal subjects.[11]

Although pleonastic subjects in null-subject languages are not common, they are not entirely absent. Interestingly, such an element shows up in substandard Hebrew, as is demonstrated by (18):[12]

(18) a. ?Ze nir'a she-Itamar shuv me'axer.
it seems that-Itamar again late
b. Ze margiz 'oti she-Itamar tamid me'axer.
it annoys me that-Itamar always late

One does not, however, find a pleonastic element (either *ze* or another one) in *all* the locations in which an expletive empty category may show up, according to the analysis of pro-drop and nominative Case assignment sketched in section 1. Rather, *ze* is completely impossible in situations such as (16): when there is another nominative-marked NP in the clause (recall that I assume that when an overt NP agrees with the verb, it must be nominative):[13]

(19) a. *Ze nishma cilcul pa'amon.
it was-heard ringing bell
b. *Ze 'axlu/'axal 'et ha-tapuxim shlosha 'anashim.
it ate-pl/ate-sg acc the-apples three people

The restricted distribution of *ze* brings to mind similar restrictions on the distribution of other pleonastic subjects. Thus, the distribution of *it* in English is similar to that of *ze* in Hebrew, but clearly distinct from that of *there*. On the other hand, French *il* (literally *it* again) can coexist with a postverbal subject, as is demonstrated by (14b), and in this it resembles English *there*. There are, however, important differences between *il* and *there* as well. In particular, note that whereas in *there* constructions verb agreement is triggered by the postverbal NP, in *il* constructions it is triggered by *il* itself: the verb in *il* constructions is always third person singular. Why should all these differences occur? Can one offer a principled characterization of these different pleonastic elements, from which their respective properties will follow?

[11] Chomsky (1981) attributes the absence of pleonastic subjects in pro-drop languages to the Avoid Pronoun Principle, a functional principle delimiting the distribution of redundant pronouns. However, utilizing the Avoid Pronoun Principle leads to a renewed question: why does the distribution of pleonastic subjects differ from that of overt pronouns? Although in some pro-drop languages overt subject pronouns are only used emphatically, and it is plausible to assume that pleonastic subjects cannot be used in such a fashion, this is not true for other pro-drop languages, where the use of subject pronouns is perfectly optional and does not carry any additional semantic information. Thus, in Hebrew no emphatic use is associated with overt personal pronouns. Nor is it demonstrable that their binding properties differ from those of nonovert pronominals, as is the case in Spanish (Montalbetti (1984)).

[12] For discussion of the use and distribution of *ze* in Modern Hebrew, see, in particular, Berman (1978).

[13] For some discussion of the relations between *ze* (and French *il*) and complement clauses, see footnote 18.

In the sections below I will try to answer these questions. In section 3 I will show that Chomsky's system can be simplified if one assumes free indexing. In section 4 I will suggest that the two indexing systems, superscripting and subscripting, can be collapsed. I will then proceed to characterize the differences between various pleonastic elements in terms of the application of the binding conditions. The implications of the proposed system for the notion "subject" and for expletive empty categories will be further explored in the following sections.

Before I proceed, one word of caution is in order with respect to the null-subject parameter. Recent work on null-subject languages has cast doubt on many aspects of various analyses of the null-subject phenomena. Safir (1982; 1985), for example, argues that the two empirical observations that the LGB analysis tries to capture—namely, the availability of an empty [NP,S] position and of postverbal nominative assignment—are not related. Chomsky (1982) further suggests that the empty category in the [NP,S] position in sentences such as (2b) is not the pronominal anaphor PRO, but rather a nonanaphoric empty pronominal, *pro*, which is in turn subject to an identification constraint met (for example) in Italian, but not in English. However, there is no theorem in the Government-Binding model that would require *pro* to be ungoverned, as must be the case for PRO. Thus, the lack of government of the [NP,S] position in (2b), as derived from the application of R, is redundant.

I will have little to say here about sentences such as (2b). My main concern is with postverbal nominative assignment, which I firmly believe to be accomplished by rule R, or a device similar to it, that would effectively allow government of a postverbal NP by Agr. Concretely, it will turn out, following the account proposed here, that in all cases in which R *must* apply in the syntax, leaving the [NP,S] position potentially ungoverned, the [NP,S] position under consideration does not exist at all, rendering the question of whether it is occupied by PRO or *pro* meaningless. On the other hand, I propose that all empty categories (*pro,* PRO, [e], or a variable) are subject to *I-identification,* a process described and formulated in section 5. If the [NP,S] position in (2b) is occupied by *pro*, the requirement for identification in that case follows naturally from the requirement that all empty categories be I-identified.

3. Free Superscripting

Let us assume that every NP can be freely assigned a superscript (but maintaining at this point the assumption that Agr and the [NP,S] position are cosuperscripted at D-Structure). Note that if the rule of nominative Case assignment is still as in (11), an NP can be assigned nominative Case in a postverbal position only if its superscript matches that of Agr and if R applies in the syntactic component. For ergative constructions, in which a postverbal NP cannot receive any other Case (the verb in these constructions does not assign accusative), the assignment of a superscript different from that of Agr will result in the failure to assign Case and in ungrammaticality.[14]

[14] A similar proposal is made by Jaeggli (1982).

At first glance, it may seem that the system proposed here would not block nominative Case assignment to objects of transitive verbs. Since superscripting is free and since Agr in null-subject languages may move into the VP in the syntactic component, it should be possible to have the situation in (20a), in which Agr is cosuperscripted with the direct object:

(20) a. $[e]^i\ [_{VP}\ V \quad +Agr^i\ NP^i]$
trans nom
*'Axalti ha-tapu'ax.
ate-I-sg the-apple-nom

b. $[e]^i\ [_{VP}\ V + Agr^i\ NP^j]$
'Axalti 'et ha-tapu'ax.
acc

In (20a) the direct object was assigned the same superscript as Agr and consequently was assigned nominative Case. Nonetheless, the sentence is ungrammatical. The grammatical sentence is (20b), in which accusative Case is assigned to the direct object. How, then, can (20a) be blocked?

I believe that the ungrammaticality of (20a) can be derived by different means. Burzio (1981) observes that a verb that assigns accusative Case also assigns a θ-role to its subject (''Burzio's generalization''). Moreover, a verb that assigns accusative Case to its object usually assigns a θ-role to it.[15] It thus follows that for every accusative-assigning verb there are (at least) two θ-positions: the [NP,S] position and the [NP,VP] position. Since every θ-position must be occupied by a referential expression, it follows in the same manner that there must be (at least) two referential expressions for every accusative-assigning verb. Assuming now that θ-roles are assigned to chains, the ungrammaticality of the representation in (20a) follows. In (20a) the empty element in the [NP,S] position and the postverbal NP constitute a chain, by virtue of sharing the same superscript. As a chain, they can only be assigned one θ-role. Since *'axal* 'eat' is an accusative-assigning verb, it requires two θ-roles to be assigned. Since only one chain is available, the representation is ungrammatical.

This account makes a rather clear prediction: if one could construct a situation that does not conform to Burzio's generalization—namely, a situation in which accusative Case might be assigned in the VP, but no θ-role is assigned to the subject—one would expect some freedom with respect to the assignment of Case in this situation. One would expect that either accusative or nominative Case would be assigned, de-

[15] There is one clear exception to this generalization: exceptional Case markers. Note, however, that usually exceptional Case markers assign Case to an NP that is assigned a θ-role by a subordinate VP, thus again resulting in a situation in which two θ-roles are assigned in the presence of an accusative-assigning verb. If, however, one could find a language that has both exceptional Case markers and rule R, one would expect a rather interesting situation to occur: if the subordinate verb does not select a θ-subject, it should be possible for that θ-subject to be coindexed with the matrix Agr and (if rule R applied) to be assigned nominative Case. Since I know of no language in which both these phenomena are attested, this prediction cannot be tested at the present time.

pending on the superscript that is assigned to the postverbal NP. If that superscript matches that of Agr, one would expect nominative Case. Otherwise, accusative Case would be expected.

Shoshani (1980) observes that in certain ergative configurations in colloquial Modern Hebrew, the postverbal subject is reanalyzed as a direct object. Consider the following paradigms:[16]

(21) a. *Hayta ktuva* yedi'a xashuva ba-'iton.
was written-f message-f important-f in-the-paper
'An important message was written in the paper.'

b. Yedi'a xashuva *hayta ktuva* ba-'iton.
message important was written in-the-paper
(meaning as in (21a))

c. *Haya katuv* 'et ha-yedi'a ha-zot ba-'iton.
was written-m acc the-message the-this-f in-the-paper.
'This message was written in the paper.'

(22) a. *Meforatim* harbe dvarim ba-karoz ha-ze.
specified many things-m-pl in-the-leaflet the-this
'Many things are specified in this leaflet.'

b. Harbe dvarim *meforatim* ba-karoz ha-ze.
many things specified in-the-leaflet the-this
(meaning as in (22a))

c. *Meforat* 'et ha-dvarim ha-'ele ba-karoz.
specified-sg. acc the-things the-these in-the-leaflet
'These things are specified in the leaflet.'

(23) a. *Karta* li te'una xamura ba-derex.
happened-f to-me accident-f serious-f on-the-way
'I had a serious accident on the way.'

b. Te'una xamura *karta* li ba-derex.
accident serious happened to-me on-the-way
(meaning as in (23a))

c. *Kara* li kvar 'et ha-te'una ha-zot kodem.
happened-m to-me already acc the-accident the-this before
'I already had this accident before.'

Let us assume that the ergative verbs in constructions such as (21)–(23) are reanalyzed as optional Case assigners. The paradigm in (21)–(23) now follows in a straightforward way from the assumption that superscripting is free. If the postverbal NP in

[16] The availability of the (c)-sentences in the speech of individual speakers varies a great deal. Thus, B. Ritter (personal communication) reports sentences such as (i) occurring in regular speech. For me, these are ungrammatical.

(i) Nafal li 'et ha-maftexot.
fell to-me acc the-keys
'My keys dropped.'

these cases is assigned the same superscript as the Agr node, and R applies in the syntactic component, the postverbal NP is assigned nominative Case, since it is both cosuperscripted with Agr and governed by it. This derivation will yield the (a) variants of (21)–(23). Alternatively, the postverbal subject can move to the subject position, where it will be assigned nominative Case by Agr, providing R did not apply in the syntax. This will result in the (b) variants.

Now consider the (c) cases. Here the postverbal NP was assigned a superscript different from that of Agr. Thus, whether or not Agr moves into the VP in the syntax, it cannot be assigned nominative Case. However, it can still be assigned accusative Case by the verb, since I assumed that the verbs in (21)–(23) are optional assigners of Case. In precisely these instances, one does not expect agreement between the verbal inflection and the postverbal NP, since such agreement is a property of nominative-marked NPs. And indeed, in the (c) cases the verb is inflected in the 3rd masculine singular, regardless of the inflection features of the postverbal NP.

Thus, the accusative derivation of some ergative constructions in Hebrew, and particularly its "coexistence" with a nominative derivation, strongly supports the claim that free superscripting can replace a special rule cosuperscripting ergative subjects and empty expletives in the [NP,S] position.

Further confirmation of the assumption that superscripts are assigned at random to postverbal NPs is found in English. Note that both (24a) and (24b) are grammatical, although the latter is considered substandard:

(24) a. There are at least seven people in the garden.
b. There's at least seven people in the garden.

Now let us assume that *be* is reanalyzed much as some ergative verbs in Hebrew are reanalyzed: it is an optional assigner of accusative Case. Following the earlier conclusion that superscripting of the postverbal NP is free, one expects precisely the variation exhibited by (24a–b). If the superscript on the post-*be* NP is identical to that of Agr (and that of the pleonastic element *there*), a chain is formed that is assigned nominative Case. In this instance one expects agreement between the postverbal NP and the inflection on the verb *be*. This is the sentence given in (24a), in which such agreement is attested. Now let us assume a derivation in which the post-*be* NP is not cosuperscripted with Agr. In this instance it cannot be assigned nominative Case. However, it can be assigned accusative Case by *be*. In this instance one does not expect agreement between the verbal inflection and the post-*be* NP. (24b) is an example of such a derivation: the post-*be* NP does not agree with the verbal inflection, and I will thus assume that it is not assigned nominative Case.

Summarizing the discussion so far, I have shown that by allowing for free superscripting of NPs, it is possible to account for a variation both in Hebrew and in English: we predict a class of cases where agreement is optional, depending on the superscript assigned to the postverbal position (or alternatively, two distinct options, each obligatory in its own stylistic level).

4. A Unified Indexing System

Safir (1982; 1985) suggests that superscripting is an instantiation of the ordinary indexing system, which is, in turn, an input to the binding conditions. I will adopt this proposal, in view of its obvious a priori advantages. Adopting this proposal immediately affords an account for the ungrammaticality of (19a–b), when contrasted with the grammaticality of (18a–b). In the examples in (19) the preverbal NP is coindexed with a postverbal argument, resulting in the pattern in (25). But this pattern is a violation of binding condition C, resulting in ungrammaticality:[17]

[17] The unified coindexing system advanced in this article is developed along lines different from those pursued in Safir (1982; 1985). In particular, Safir argues that the definiteness restriction attested in the French *il* constructions and in the English *there*-insertion constructions is to be attributed to the violation of binding condition C that results from the coindexing of *il* and *there* with postverbal NPs. As will become obvious, I do not adopt this proposal here, for both empirical and theoretical reasons. Rather, I assume that coindexing exists between *there* and the postverbal NP, but not between *il* and the postverbal NP. It is worthwhile to point out that his system predicts that definiteness restrictions should not apply in languages that allow free inversion, since it is crucial to his system to assume that in these cases no coindexing is attested between the [NP,S] position and the postverbal NP. Notice, however, that both Hebrew and Rumanian allow a wide range of postverbal subjects, while exhibiting a definiteness effect, as is illustrated by the following examples ((i)–(iii) are courtesy of D. Steriade (personal communication)):

(i) Au vizitat muzeul trei baieti.
have visited the-museum three boys
'Three boys have visited the museum.'

(ii) *Au vizitat muzeul baietii.
have visited the-museum the-boys

(iii) *Au vizitat muzeul baietii mei.
have visited the-museum the-boys my
'My boys visited the museum.'

(iv) Parac viku'ax.
erupted argument

(v) *Parac ha-vikuax.
erupted the-argument
'The argument started.'

The Rumanian data are particularly striking, since the distribution of postverbal quantifiers ((vi)–(vii)) is identical to that of English ((viii)–(ix)):

(vi) Au vizitat muzeul multi baieti.
have visited the-museum many boys
'Many boys visited the museum.'

(vii) *A vizitat muzeul fiecare baiat.
has visited the-museum every boy.
'Every boy visited the museum.'

(viii) There were many boys in the room.

(ix) *There was every boy in the room.

In Safir's account both the distribution of postverbal quantifiers in English and the definiteness effect follow from the formation of a chain between an expletive in the [NP,S] position (English *there*) and the postverbal subject, and the subsequent application of binding condition C. In order to account for the Hebrew and Rumanian data, therefore, Safir must assume that a (null) expletive element occupies the [NP,S] position, thus forming a chain and creating the observed distribution of grammaticality judgments. However, there is no independent evidence for the existence of such an empty pleonastic element in either language, and in fact, I have argued specifically against its existence in Hebrew. Note further that if such an argument is made for Rumanian, it would result in claiming that Rumanian is different in this respect from, say, Italian and Spanish, which do not have such a null pleonastic, and which do not exhibit a definiteness effect. However, in other respects (e.g. empty pronominals) Rumanian null subjects behave just like their counterparts in Italian and

(25) NP_i (Agr_i) V NP_i

Thus, one expects the grammaticality of sentences with the pleonastic element *ze* exactly when there is no other NP in the clause that is coindexed with it, or, in other words, when there is no other nominative NP in the clause.

Clearly, deriving the difference between (18) and (19) by means of the binding conditions immediately raises a question with respect to the grammatical (14)–(17) sentences. These sentences all seem to pattern with (25); consequently, one would expect them all to be ungrammatical, just as (19a–b) are ungrammatical.

Viewed from another perspective, however, the "binding conditions" solution enables us to characterize the difference between various pleonastic elements and their behavior. Consider the following possibility: let us assume that binding condition C, essentially the rule of disjoint reference of Chomsky (1975) and Lasnik (1976), can only apply to NPs that have inflectional features (i-features) such as number, gender, and person. This is only a natural extension of the logic behind binding condition C. Clearly, disjointness in reference cannot be stated with respect to an element that has no referring features. Now consider the inventory of pleonastic elements discussed so far: the i-features test sharply divides them into two classes. To one side the test places *it,* French *il*, and Hebrew *ze*, all having clear i-features in their respective languages (all, in fact, are singular 3rd person and, if the language has a gender distinction, masculine; I return to this uniform characterization below). To the other side the test places *there*, which lacks i-features, no doubt because of its adverbial nature. Considering again the cases of *there* clauses such as those in (14a), it is possible now to predict two correct results with respect to these constructions. First, their grammaticality is predicted: since *there* does not enter binding condition C, it does not fall under the representation in (25) and the construction is not ruled out. Second, the verbal agreement with the postverbal NP in *there* constructions is predicted, since the preverbal NP *there* does not have any i-features of its own. Once a chain is formed, it has only the i-features of the postverbal NP, and those are the ones that trigger agreement.

Turning now to *il, it,* and *ze,* note that the latter two behave as expected: they do not cooccur with a postverbal nominative NP, since such an occurrence would result in representation (25) and in ungrammaticality. Thus, they require no further explanation.[18] Consider, however, French *il*, which does occur with postverbal NPs, resulting

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Spanish, making the claim that a coindexed pleonastic is available in the former but not in the latter dubious. For arguments that the definiteness effect is not a syntactic phenomenon, see Woisetschlaeger (1983). For arguments to the contrary, see, in addition to Safir (1982), Reuland (1983b,c). For a more recent argument that in Italian as well definiteness effects hold in postverbal ergative constructions, see Belletti (1985).

[18] I leave undiscussed the question of whether pleonastic elements such as *it, ze,* and *il* form chains with postverbal complement clauses. From the perspective advanced here, the question is relevant only if it is shown that such complement clauses enter the binding conditions, in particular binding condition C. Such an argument is advanced by Safir (1982; 1985), who contrasts the ungrammaticality of sentences such as (ii) with the grammaticality of (i):

(i) $[_S$ That John is guilty$]_i$ bothered the man who knew it_i.
(ii) *It_i bothered $[_{NP}$ the man who knew $[_S$ that John was guilty$]_i]$.

in what appears to be a binding violation. It was noted, however, that there is a crucial difference between *il* constructions and *there* constructions. Whereas in the latter agreement is triggered by the postverbal NP, in the former it is *il* itself that exclusively triggers agreement. In view of this, it is wise to ask whether *il* and the postverbal NP in constructions such as (14b) form chains at all. It is quite plausible to assume instead that there is no such chain and that the postverbal NP does not receive its Case by inheritance from *il*.

Pollock (1981) argues precisely against such Case inheritance. He points out that in *il* constructions a postverbal NP is well-formed only if preceded by a verbal form or a passive participle, but not if preceded by an adjective. This situation contrasts sharply with the situation in cases of stylistic inversion analyzed in Kayne and Pollock (1978), where Case for the inverted subject is clearly inherited from the subject position and where no such restriction holds:

(26) a. De quoi ont été contents tes amis?
b. *De quoi est-il content trois de tes amis?
c. Trois de mes amis sont contents de leurs travaux.
d. *Il est content de leur travaux trois de mes amis.
((26a–c) = Pollock's (33a–c))

Clearly, if *il* and the postverbal NP were part of the same chain, the categorial nature of the preceding, governing element would not make any difference at all. Only if Case is assigned directly by this category, and not by inheritance from *il*, does this restriction make sense. Thus, Pollock's results strongly support the conclusion that no chain is formed between *il* and the postverbal NP in (14b). In the absence of such a chain, we do not expect the binding conditions to be relevant, and the grammaticality of *il* constructions in French follows.[19]

Let us summarize the discussion in this section. Following Safir (1982; 1985), I assumed that the superscripting system utilized for nominative Case assignment should be unified with the standard indexing system, which is an input to the binding conditions. I proceeded to assume that only elements that have i-features enter disjoint reference,

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If the postverbal clause enters the binding condition, then one must reject the proposal (advanced, for example, in Stowell (1981)) that pleonastic elements and complement clauses form chains. In Stowell's work the need for a chain stems from the fact that complement clauses receive θ-roles and hence, assuming the visibility hypothesis of Chomsky (1981), must be Case-marked. Since in Stowell's system direct Case assignment to clauses is not possible, a chain with a Case-marked element must be formed. Since I reject here the assumption that the Case Filter is to be derived from the visibility hypothesis (see footnote 20 for discussion), no chain formation is necessary to ensure θ-role assignment to clauses.

[19] I do not discuss here the question of what assigns Case in *il* constructions in French. Pollock argues that it is the participle itself. A similar line of argument is advanced by Haïk (1982), who observes that the impossibility of objective clitics in *il* constructions is not problematic. Since these constructions are constrained by a definiteness requirement, and since clitics are definite, one does not expect clitics to occur in these constructions. Haïk further observes that the clitic *en* may occur in these constructions (although it should be pointed out that the distribution of the clitic *en*, though sensitive to structural factors, may not be related to accusative or objective Case).

thus excluding *there* and accounting for some properties of *there* constructions. This assumption also accounted for the distribution of *ze* and *it*. However, further explanation was required in the case of French *il*. I argued that contrary to appearance, it does not pattern with *there*, and it does not form a chain with a postverbal NP. Whereas *il* itself is assigned nominative Case in the regular fashion, the postverbal NP is assigned Case otherwise. The latter conclusion is supported by research presented in Pollock (1981).[20]

5. Empty Pleonastics and I-Identification

5.1. Empty Pleonastics

The above discussion leaves untouched one type of pleonastic element: the phonologically null one attested in (3a,c), (4b), and (5c). Empty pleonastics appear in two situations. In one of them the pleonastic is clearly not coindexed with a postverbal NP, and its distribution resembles that of *it* and *ze*. These are the cases in (3). On the other hand, in the ergative construction (4b) and in the inversion case (5c), there is a postverbal NP with which the pleonastic might be coindexed. Note that in both (4b) and (5c) the postverbal NP agrees with the verb, and thus within the system proposed here it must be assumed that it is assigned nominative Case.

Consider first (4b). Setting aside for the moment the rule that coindexes Agr and the [NP,S] position at D-Structure, it follows from the discussion thus far that it must

[20] If the discussion to this point is correct, and no chain is established in *il* constructions in French, then the visibility hypothesis of Chomsky (1981) may not be maintained. Specifically, note that the pleonastic *il* must be assigned Case, although it is not in a θ-marked chain. Similarly, recall that in the discussion of *there* constructions in English, it was assumed that when no verbal agreement with the postverbal NP is attested, no chain is formed and the postverbal NP is assigned accusative Case by a reanalyzed *be* (see (24a–b) and related discussion). There, as well, Case must be assigned to the pleonastic *there*, although it is not a member of a θ-marked chain. I am grateful to J. Aoun for pointing out to me this particular consequence of the system presented here.

Some independent evidence for the fact that pleonastic elements must be assigned Case regardless of their θ-status is found in German and Dutch, where pleonastic elements may not appear in infinitives, even when they are clearly not part of a chain, since there is no postverbal NP with which such a chain might be formed. Thus, consider the following sentences in Dutch:

(i) a. Er wordt gedanst.
'It was danced.'
b. *Er gedanst te worden.
'It to be danced.'

An anonymous reviewer points out that the system presented here predicts the cooccurrence of *it*/*ze* with postverbal accusative subjects. Note, in this context, that English does allow this configuration, albeit in a restricted environment, as in cleft constructions:

(ii) It was $\left\{\begin{matrix}\text{me}\\\text{John}\end{matrix}\right\}$ who Mary invited.

As for Hebrew, although *ze* and accusative postverbal subjects do not cooccur, one must bear in mind that both pleonastic *ze* and accusative subjects are dialectally restricted. Their failure to cooccur may thus be coincidental.

have one of the structures in (27):

(27) a. $[e]_i\ [V + Agr_i\ NP_i]$
b. $[e]_i\ [V + Agr_j\ NP_j]$

Consider first the representation in (27a). Following the conclusions in section 4, (27a) can be a grammatical representation only if the pleonastic null element is devoid of i-features. If that is the case, it will not enter binding condition C and coindexing it with the postverbal NP will not result in ungrammaticality. Consider, however, the following paradigm:

(28) a. *Margiza 'oti she-Itamar tamid me'axer.
annoys-f-sg me that-Itamar always late
b. *Margizim/*margizot 'oti she-Itamar tamid me'axer.
annoy-m-pl/-f-pl me that-Itamar always late
c. Margiz 'oti she-Itamar tamid me'axer.
annoys me that-Itamar always late

The ungrammaticality of (28a–b) should be contrasted with the grammaticality of (28c) (=(3c)), and it clearly derives from the wrong agreement on the verb. Thus, null pleonastic elements do have a set of i-features, which trigger a very particular agreement: 3rd person masculine singular. In view of this, the representation in (27a) should be ruled out as a violation of the binding conditions. Below it will become clear that the empty pleonastic in (27a) inherits its i-features by identification. It is important to note, however, that it is assumed that there is a unique set of features that the pleonastic empty element may receive in any given grammar in order to receive the appropriate interpretation. Essentially, it is argued that the ungrammaticality of (28a–b) is not due to incorrect agreement; rather, if the pleonastic ends up with any set of features other than 3rd person masculine singular, it would not be interpretable as a pleonastic. (I return below to empty categories that are adverbial in nature and do not have i-features.)

Consider now the configuration in (27b). It is clear that this representation is not ruled out by the binding conditions. In (27b) there is no coindexing between the [NP,S] position and the postverbal subject, since there is no coindexing between the [NP,S] position and Agr. One might utilize the convention of coindexing the [NP,S] position with Agr as a means to rule out the representation in (27b), since such coindexing failed to occur in that representation. In what follows, however, I will argue that (27b) is not a possible grammatical representation for independent reasons that are divorced from the rule coindexing the [NP,S] position with Agr. Concretely, I will argue that the rule coindexing Agr and the [NP,S] position should be dispensed with and replaced by rule (1), and that the ungrammaticality of (27b) is due to general conditions on empty categories. However, in order to show that this is the case, it is necessary to digress and consider other data that are relevant to empty categories.

5.2. *I-Identifying Empty Categories*

Consider the following paradigm from Modern Hebrew:

(29) a. 'Ani 'axalti 'et ha-tapu'ax.
I ate-1-sg acc the-apple
'Axalti 'et ha-tapu'ax.
ate-1-sg acc the-apple

b. Hu 'axal 'et ha-tapu'ax.
he ate-3-sg acc the-apple
*'Axal 'et ha-tapu'ax.
ate-3-sg acc the-apple

c. 'Ani/'ata/hu 'oxel 'et ha-tapu'ax.
I/you/he eat-sg acc the-apple
*'Oxel 'et ha-tapu'ax.
eat-sg acc the-apple

(29) illustrates a previously observed fact (Borer (1980, 1983)), namely, that pro-drop in Modern Hebrew is restricted in a particular way: it is not allowed in present tense at all, and in the future and past tenses it is restricted to first and second persons. The availability of pro-drop in Hebrew seems related to the availability of person markers in the Agr node. In present tense, Agr in Hebrew is defective (for historical reasons that need not concern us here). It contains markers for gender and number, but not for person. The third person in the other tenses is the unmarked person in Hebrew. It would thus be plausible to assume that the person marker in these forms is in some sense not sufficiently specific and thus cannot "trigger" pro-drop. How can one account formally for these observations? Note that the grammar already contains a rule coindexing Agr and the subject position. Let us assume that as part of this indexing procedure, i-features that are part of Agr serve as identifiers for the coindexed empty category in the [NP,S] position. This is essentially in the spirit of Taraldsen (1980) (see also Chomsky (1982)). Let us further assume that the need for such identification stems from the fact that empty categories do not have intrinsic i-features at all (in this, I disagree with Chomsky (1981), but I adopt a certain aspect of the model proposed in Bouchard (1984)). Therefore, they must be assigned i-features by a coindexed set of i-features. I will call this process *I-identification* (= Inflectional identification). The set of I-identifiers assumed in this work is coextensive with those elements that are assigned an index and are assumed, within the Government-Binding model, to have an inherent set of i-features—namely, a co-indexed antecedent, a clitic, and Agr. I assume that the following principle holds in the grammar:

(30) An empty category must be I-identified.[21]

[21] No structural conditions are imposed on the relations between an I-identifier and the element that it I-identifies. It is assumed that other systems of the grammar will impose various structural restrictions on these relations. For instance, anaphoric antecedence would be delimited by binding condition A for independent

Returning now to the sentences in (29), the "underspecified" pro-drop cases may be ruled out by appealing to the principle in (30): in present tense the person marker is missing and thus I-identification cannot be accomplished. Present tense Agr in Hebrew is therefore not "rich" enough, in the same sense that English Agr is not "rich" enough, and the sentence results in ungrammaticality. On the other hand, in third person (past and future) the person marker is somehow not sufficiently "strong" to meet the condition in (30), because of the unmarked nature of the 3rd person inflection, resulting in non-I-identified empty category and in ungrammaticality. I return below to the nature of this lack of strength.

5.3. A Note on Control

The purpose of this section is to propose a way in which control structures may be reconciled with the principle in (30). As this topic is discussed in detail in Borer (1985), I will only summarize the analysis given there, referring the reader to that paper for a more detailed discussion. In Borer (1985) I argue that obligatory control may be reduced to the binding conditions. Concretely, I argue that Agr may be either anaphoric or non-anaphoric, and that in cases of obligatory control it is anaphoric and hence must be A-bound. I further assume that anaphoric Agr may not assign Case, thus accounting for the null subject in infinitives. (I follow Stowell (1982) in assuming that infinitives have an Infl node. See section 7.1 for detailed discussion.) Note, now, that an anaphoric Agr, following the assumptions advanced here, may not serve as an I-identifier for a co-indexed [NP,S] position, unless it is itself coindexed with some antecedent that may transmit these features. As a result, there must be an NP that A-binds Agr (assumed to be the head of S′ as well as S) in its governing category, the immediately dominating S, in most cases, or higher, in cases where the binding conditions allow for the formation of larger governing categories. Once Agr is bound, it does inherit from its binder the set of i-features necessary to transmit to the [NP,S] position. As that position is empty in infinitives, it falls under principle (30), and such I-identification must be accomplished, or the sentence in question will be ungrammatical. The effects of obligatory control result.

Returning to the discussion of (29a–c), we are now in a position to make a principled distinction between the grammaticality of (29a) and the ungrammaticality of (29b–c). Concretely, let us assume that the person marker in the Agr node of past and future tenses in Hebrew is anaphoric, but that in present tense it is missing altogether. The ungrammaticality of (29b) now follows from two factors: the failure of the anaphoric person marker to be bound, and the subsequent failure of [e] in the [NP,S] position to be properly I-identified. The ungrammaticality of (29c), on the other hand, follows only

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reasons. The relations between a clitic and an empty category would be delimited by government, for reasons of θ-role assignment (see Borer (1983) for discussion). And so forth. I-identification is a unified phenomenon only insofar as it entails the coindexing of an empty element that does not have any i-features with an antecedent that does.

from the failure of I-identification. Note, now, that this account makes an interesting prediction. Whereas the construction in (29c) cannot be salvaged, the construction in (29b) can be. If an antecedent is supplied for the anaphoric person marker in (29b), Agr will be bound as required and the [e] in the [NP,S] position may be I-identified. On the other hand, in (29c) no binding is possible, since Agr is not anaphoric—it is simply defective, on a par with Agr in non-pro-drop languages. Hence, the availability of an antecedent should not make any difference here. This prediction is exactly correct, as is clear from the following examples:

(31) *Talila$_j$ tamid 'omeret le-Itamar$_i$ she [e]$_i$ macliax be-bxinot.
Talila always says to-Itamar that succeeds in-tests
'Talila always tells Itamar that he succeeds in tests.'

(32) a. Talila$_j$ 'amra le-Itamar$_i$ she [e]$_i$ yavo.
Talila said to-Itamar that will-come-m-sg
'Talila told Itamar to come.'

b. Talila$_j$ 'amra le-Itamar she [e]$_j$ tavo.
Talila said to-Itamar that will-come-f-sg
'Talila told Itamar that she will come.'

c. Talila$_j$ 'amra le-Itamar$_i$ she hem$_k$/*[e]$_k$ yavo'u.
Talila said to-Itamar that th[illegible] will-come-m-pl
'Talila told Itamar that *(they) will come.'

Sidestepping the question of the nature of the empty category in the [NP,S] position in (32a–c) (see section 2 for some comments), it is obvious nevertheless that an empty category in the [NP,S] position of the embedded clause is licensed only if it is coindexed with a matrix argument. Via the anaphoric Agr, a matrix NP serves as an I-identifier, supplying the missing i-features and enabling the empty category to appear. Note that overt pronominals are not subject to a similar restriction, as is exemplified by the grammatical expansion of (32c). On the other hand, the ungrammaticality of (31) is now on a par with the ungrammaticality of the equivalent English sentence: as English does not have an anaphoric Agr, the appearance of control in tensed clauses is blocked.[22]

In order to complete our brief discussion of I-identification and control, consider briefly the case of arbitrary reference, classically attested in infinitival structures such as (33):

(33) It is not easy [e] to solve this problem.

The empty element in the subject position of the embedded infinitival, usually considered to be PRO, receives arbitrary interpretation, or more concretely, it receives the inter-

[22] Note that the availability of anaphoric Agr is independent from the pro-drop parameter. Thus, both English and Italian seem to have anaphoric Agr in infinitives, but not in tensed clauses. Chinese, on the other hand, seems to have an anaphoric Agr in tensed clauses, on a par with Hebrew, thus potentially accounting for the distribution of empty pronominal subjects discussed in Huang (1984). For additional evidence for the anaphoric status of past and future Agr in Hebrew, as well as for some discussion of the status of empty pleonastics in this context, see Borer (1985).

pretation of a set: "Given a set *S*, it is not easy for a member/members of *S* to solve this problem." The empty category in (33) is not straightforwardly I-identified by the system proposed above. The Agr node in the subordinate clause in (33) is anaphoric by the present account, but there seems to be no appropriate matrix NP that can serve as its binder. This problem is mirrored in other systems within the Government-Binding model. In Chomsky (1981), for instance, PRO is considered a pronominal anaphor, thus accounting for its range of interpretations, for the control property, and for the absence of a governing category. However, precisely in cases such as (33) the anaphoric nature of PRO is rendered conceptually problematic: such cases display an anaphoric expression—that is, an element lacking inherent reference—without an antecedent.

The problem may be handled by assuming that arbitrary interpretation is a result of a quantification rule. For concreteness, I will adopt the version of this proposal advanced in Epstein (1984). Epstein observes that the scope of arbitrary PRO is not clause bound. On the other hand, it does not go "all the way up." Rather, it is restricted to the next clause up. Thus, observe the contrast between (34a) and (34b):

(34) a. It is not easy [$_{S'}$[e] to solve this problem].
b. John thinks that it is not easy [$_{S'}$[e] to solve this problem].

In order to account for these facts, Epstein suggests that arbitrary interpretation is a result of a rule of Quantifier Raising (QR, in the sense of May (1977)) and that it is constrained by Subjacency. The operator that binds the infinitival [NP,S] position is in the matrix, occupying the optional argument position following *easy*. Though Epstein assumes that that operator is specifically a small *pro* (in the sense of Chomsky (1982)), I will simply assume that it is an abstract operator, the precise nature of which requires further investigation.[23] I will further deviate from Epstein's analysis in assuming that the movement involved is syntactic (rather than LF) and that it adjoins the null arbitrary operator to S (see Borer (1985) for some motivation). Further adapting Epstein's proposal to the system proposed here, I will assume that the abstract operator A-binds the anaphoric infinitival Agr and that its index is thus transmitted to the embedded PRO. Therefore, the D-Structure representation of (33) is as in (35). Following the application of movement, the fronted operator is coindexed with its trace, with the infinitival Agr, and with the PRO in the infinitival [NP,S] position, giving the latter the interpretation

[23] One might object that empty operators fall under principle (30), and hence structures such as (35) are ruled out in principle. An anonymous reviewer points out that this is a plausible assumption in English, where abstract operators appear only in relative clauses, *tough* constructions, and topicalization structures, where, one might argue, they are I-identified, but not, say, in free relatives, where no such I-identification is possible. Though this might seem plausible in English, it is nevertheless the case that some languages allow for clearly non-I-identified empty operators. For instance, in Biblical Hebrew the following is a well-formed free relative:

(i) 'Asher yake 'et Kiryat-sefer u-lexad-a venatati l-o 'et Axsa
that will-hit acc Kiryat-sefer and-capture-it will-give-I to-him acc Axsa
bit-i le-'isha.
daughter-mine to-wife
'Whoever will hit Kiryat-sefer and capture it, I will give him my daughter as a wife.'

of a bound pronoun. This S-Structure representation is given in (36):

(35) it is not easy OPERATOR$_i$ [$_{S'}$[e] Agr to solve this problem]
(36) OPERATOR$_i$ [it is not easy [e]$_i$ [$_{S'}$[e]$_i$ Agr$_i$ to solve]] this problem

Although Epstein does not discuss cases such as (37a), note that they do not present a problem for his analysis, since the fronted operator may bind both the anaphoric Agr of the infinitive position and its own trace in the matrix clause. This is illustrated by the assumed D-Structure representation in (37b) and the assumed S-Structure representation in (37c):[24]

(37) a. To solve this problem is tiring.
b. [PRO Agr to solve this problem] is tiring OPERATOR$_i$
c. OPERATOR$_i$ [PRO$_i$ Agr$_i$ to solve this problem] is tiring [e]$_i$

Given this analysis, the [NP,S] position in sentences such as (33) is in fact I-identified by an arbitrary operator through the infinitival Agr, thus fitting naturally into the system proposed here.

Now consider again the nature of the empty category in the [NP,S] position in the representations in (27). On the basis of the sentences in (28), it was argued that empty pleonastics must have i-features. Since by assumption empty categories never have intrinsic i-features, these i-features could only be assigned by an I-identifier. The only available assigner in (27) is Agr. However, in (27a) coindexing with Agr would result in a violation of the binding conditions, since the empty category would be coindexed with the postverbal NP as well, and in (27b) there is no coindexing with Agr. (I assume here, as is natural, that when an empty category is coindexed with an I-identifier it automatically inherits its features. On the other hand, elements that have i-features cannot be excluded from binding condition C.

One last possibility must be considered: the possibility that the [NP,S] position in (27) is occupied by an empty category that is not an NP at all. Rather, like *there*, it is adverbial in nature; hence, it need not be I-identified and does not enter the binding conditions. Consider, however, the ungrammaticality of (38a–b), when contrasted with (39a–b):

[24] An account along the lines of Epstein's leaves unexplained the ungrammaticality of cases such as (ia–b), in which there is no obvious matrix argument that can serve as an empty operator:

(i) a. [PRO to misbehave oneself in public] would irritate the police.
b. The tailor knows [what [PRO to wear this season]].

Note, however, that although these sentences present a problem to any account attempting to reduce arbitrary PRO to control, the analysis proposed here offers a fall-back position that does not involve a violation of (30). Thus, exactly on a par with what is conservatively assumed, it might be assumed that in the absence of an appropriate A-binder for the anaphoric Agr in the infinitives in (ia–b), and in certain well-specified environments, the anaphoric Agr is assigned a default (nonanaphoric) arbitrary value, which may in turn serve as an I-identifier for PRO. Although this account is by no means worse than the default assignment of *arb* to PRO in these contexts, it would clearly be an advantage to try and reduce the cases in (i) to control (or binding, in this framework). See Borer (1985) for some more discussion.

(38) a. *John believes [e] to be a unicorn in his backyard.
b. *[e] being a unicorn in his backyard, John called the CBS news.
(39) a. John believes there to be a unicorn in his backyard.
b. There being a unicorn in his backyard, John called the CBS news.

What is the reason for the ungrammaticality of (38a–b)? Clearly, the postverbal NP *a unicorn* cannot be assigned Case directly in both (38) and (39). (Structures such as (38)–(39) clearly do not lend themselves to an accusative derivation.) In (39), however, a chain is formed between the pleonastic *there* and the postverbal NP, transferring Case to that position and rendering the sentences grammatical. Obviously, this device is not available in (38a–b). Note that if one assumed that English had a pleonastic empty category with properties that mirror those of the overt pleonastic *there*, the ungrammaticality of (38a–b) would be rather hard to explain. Consider how one would have to proceed in order to account for the ungrammaticality of (38a–b), given the assumption that a *there*-like [e] does exist. One could argue that the ungrammaticality of (38a–b) derives from the fact that the [e] in these constructions needs to be I-identified, in spite of its adverbial nature, and that in the absence of such I-identification in (38a–b), the sentences are ruled out. However, the process of I-identification assumed here entails the transfer of i-features from an I-identifier to an empty category. In turn, an empty category with i-features must enter the binding conditions. Formation of a chain between an I-identified empty category and a postverbal NP thus violates the binding conditions. Thus, if *there*-like instances of [e] must be I-identified, they can never enter chain formation and for all practical purposes they are identical to *it*-like empty elements. If, on the other hand, the [e] in (38a–b) need not be I-identified, the ungrammaticality of these sentences remains mysterious.[25] The ungrammaticality of (38a–b) can be accounted for in a natural way if one assumes that English does not have adverbial empty categories.

It is appropriate at this stage to ask whether such an adverbial empty category exists at all. A priori, its properties and its distribution are entirely unclear. When it participates in chains, it may not be I-identified, and hence one does not expect the usual restrictions on the distribution of empty categories to hold (for example, it might appear in the [NP,S] position of non-pro-drop languages). In fact, under the natural assumption that when any [e] is coindexed with an I-identifier it must inherit its i-features, it is quite possible that although such an empty adverbial may appear in the [NP,S] position of non-pro-drop languages, it may not appear in the [NP,S] position of tensed clauses in pro-drop languages, where it may not escape I-identification. Note further that since adverbs need not be lexically selected, there is no a priori reason to assume that any given structure

[25] One might, in turn, argue that the ungrammaticality of (38a–b) derives from the fact that the empty categories are assigned Case and hence must be variables. Since they are not bound by any operator, the sentences are ungrammatical. Incidentally, if this is indeed the case, the variable nature of the empty categories in (38) cannot be derived from the visibility hypothesis, since the latter states only that variables must have Case, but does not state that Case-marked empty categories must be variables. For arguments against the assumption that [e] is a variable iff it is Case-marked, see May (1981), Borer (1981).

does not contain any number of base-generated empty adverbials that do not have to be I-identified; nor do they have to participate in any grammatical operation whatsoever.

Under the assumption that this is an undesirable state of affairs, some robust evidence is needed in order to establish the existence of such elements. Such evidence may consist either of semantic content introduced by such an adverb or of clear indications that it participates in grammatical operations (e.g. chain formation).

Torrego (1983) reports a dialect of Spanish in which such an empty adverbial might be attested. Torrego observes that in the dialect in question sentences such as (40a–b) contrast with sentences such as (41a–b):

(40) a. Seleccionaron una pizarra para escribir los alumnos.
selected-they a blackboard to write the students
'They selected a blackboard for the students to write on.'

b. Construyeron un puente para pasar los trenes.
build-they a bridge to pass the trains
'They built a bridge for the trains to pass on.'

(41) a. *Seleccionaron una pizarra para comprar los alumnos.
selected-they a blackboard to buy the students
'They selected a blackboard for the students to buy.'

b. *Construyeron un puente para ganar dinero el gobierno.
build-they a bridge to earn money the government
'They built a bridge for the government to make money of it.'

In order to explain the difference in grammaticality between (40) and (41), Torrego appeals to the nature of the empty elements that might be occupying the subject position of the infinitives in (40) and (41). She observes that this empty pleonastic seems to impose semantic constraints on the interpretation of the sentences in which it occurs. In particular, it acts as a locative adverbial; as a result, the construction in (40a–b) is only possible if a locative interpretation is assigned to the subordinate clause. As no such interpretation is available in (41a–b), these constructions are ruled out.

Thus, it would seem, the empty pleonastic occurring in these Spanish constructions has locative properties, suggesting that it is an empty adverbial. Since this adverbial appears in the subject position of an infinitive, it is not I-identified, as required.[26]

[26] The status of the evidence presented in (40)–(41) is not entirely clear. Contrary to Torrego (1983), it is not clear whether a chain is formed between the post-*para* NP and the postverbal NP, since the postverbal NP may surface as a nominative pronoun, and it would thus be necessary to assume that *para* assigns nominative Case. Furthermore, postverbal NPs in Spanish may surface in infinitives (as overt nominatives, when they are pronominal) without the presence of *para* altogether and without the imposition of any semantic restrictions. Thus, it is not clear that when an empty adverbial occupies the [NP,S] position of the infinitive in (40a–b), it is placed there for purposes of Case transmission. It thus might be that the empty adverbial in question is required in this construction for independent reasons (for example, *para* in this context subcategorizes for an adverbial to which it may not assign Case). The contrast observed by Torrego is further restricted to a rather narrow dialect. This suggests that the restriction on the distribution of *para* is dialect-specific, and that in other dialects of Spanish the empty adverbial is not present. The availability of nominative Case assignment in the postinfinitival position remains a mystery in this account as well as in all other standard accounts of nominative Case.

To conclude this brief digression, it is clear that if adverbial empty categories exist, as the reported dialect of Spanish might suggest, they do not pattern with nominal empty categories in several ways. First, they need not be I-identified. Second, they need not be bound, either by an A-antecedent or by an Ā-antecedent. Third, and most important, their adverbial properties are transparent. Given in particular this last property, it seems plausible that the [NP,S] position in (27) is not occupied by such an empty adverbial.

Thus, it seems, there is no empty category that could fill the [NP,S] position in (27), and I conclude that the [NP,S] position in sentences such as (4b), represented by (27), may not be generated. Its generation would lead to ungrammaticality, since no element may occupy it. The failure of the [NP,S] position to be generated in sentences such as (4b) is on a par with the failure of other $\bar{\theta}$-positions to be generated—for instance, the failure of an NP position to be generated following verbs that do not assign a θ-role in the [NP,VP] position, such as *believe*. In the case of *believe* the absence at D-Structure of a position following the verb is a consequence of a particular interpretation of the Projection Principle, according to which D-Structure is not only a representation of all GF_θ, but in fact a strict representation of all and only GF_θ.

A $\bar{\theta}$-[NP,S] position, however, differs in important respects from a $\bar{\theta}$-[NP,VP] position. Crucially, one must allow at least for its optional generation, as in the cases of passive or ergative constructions in which the postverbal argument is fronted into the [NP,S] position. On the other hand, if the position *is* generated, it must be filled prior to S-Structure and the application of the binding conditions. Otherwise, the empty category in the [NP,S] position will inherit i-features from its I-identifier and a violation of the binding conditions (or, alternatively, of the Case Filter, if no chain is formed) will result. In languages such as English further violation would result from the failure of the [e] to be properly I-identified. Thus, for passive constructions and for ergative constructions such as (4b) the base generation of an [NP,S] position will immediately result in fronting, yielding the structure in (42):

(42) a. Cilcul pa'amon$_i$ nishma [e]$_i$.
ringing bell heard
'Bell-ringing was heard.'
b. Vikuax$_i$ parac [e]$_i$.
argument erupted
'An argument started.'

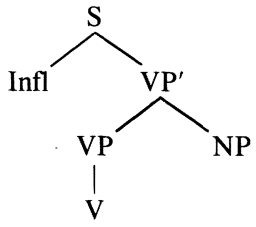
I return in section 6 to the difference between $\bar{\theta}$-[NP,S] positions and other $\bar{\theta}$-positions.

As a last point in this section, consider cases of inversion, as attested in the Italian sentence (5c), repeated here as (43):

(43) Ha telefonato Gianni.
has telephoned Gianni
'Gianni telephoned.'

I will deviate from most standard accounts of the inversion phenomenon attested in (43) in assuming that the structure there is base-generated with the logical subject in a postverbal position, as a sister to the VP, and dominated by a super-VP that I will refer to as VP′. I will adopt a proposal of Safir (1982; 1985) and assume that θ-role assignment to the external argument may be done directly when the external argument is a sister of VP and that, consequently, direct θ-role assignment to the [NP,VP′] in (43) is possible. I deviate from Safir's account in assuming that no movement took place and that the [NP,S] position was not base-generated. Thus, the properties of (43) are on a par with those of (4b). This account makes it possible to do away with a host of problems that arise under the assumption that inversion involves rightward and downward movement, leaving behind a trace that is not c-commanded by its antecedent, but in turn c-commands it. The following is the tree structure for (43):

(44)



I will not pursue further the consequences of proposing a base-generated VP′ projection. For some proposals for a super-VP similar in nature to the one proposed here, see Manzini (1983).

6. The Extended Projection Principle and I-Subjects

Consider some aspects of the discussion of I-identification. I concluded that empty categories must be I-identified and that coindexing with Agr may achieve this end. In view of this fact, one might wonder whether there is a reason to maintain the rule that coindexes (or, as an earlier version has it, assigns the same superscript to) Infl and the [NP,S] position. Note that in the case of empty categories it will be required for I-identification and in the case of overt NPs it will be required for nominative Case assignment. Thus, one could argue for an entirely free indexing system, which would in turn result either in I-identification or in nominative Case.

Consider, however, a conceptual problem associated with the discussion above. A strict interpretation of the Projection Principle was argued for: one that entails that D-Structure is a representation of all and only GF_{θ}. Nevertheless, it was suggested that the [NP,S] position is optional, even when it is nonthematic. Recall that this is not the case for [NP,VP] positions that are nonthematic. These cannot be present at D-Structure. Why, then, is the [NP,S] position allowed optionally in $\bar{\theta}$-positions? Intuitively speaking, one is tempted to seek an answer in terms of the relationship between Infl and the [NP,S] position: if one were to assume that the [NP,S] position is in some sense an *argument* of Infl, perhaps selected by Infl in a sense to be made precise, then the presence of that

position would be explained. On the other hand, since Infl does not assign θ-roles, the presence of that position, if indeed conditioned somehow by Infl, should not be dependent on the GF_θ representation.

But it seems that such an assumption, however formulated, leads to new questions. If the [NP,S] position is an argument of Infl, then one expects it to be obligatory, not optional. Yet I argued that in sentences such as (4b) the [NP,S] position is not generated at all and that, in passive constructions in languages that allow R to apply in the syntax, that position is optional.

The assumption that the [NP,S] position is obligatory is explicitly required by the Extended Projection Principle of Chomsky (1982). Within that model the obligatoriness of the [NP,S] position in regular clauses and in gerunds is contrasted with the optionality of subjects in, for example, NPs—hence the contrast between (45) and (46):

(45) a. John destroyed the city.
b. *Destroyed the city.
c. John('s) destroying the city.
d. PRO destroying the city.
e. *Destroying the city.

(46) a. John's destruction of the city
b. the destruction of the city

Clearly, this argumentation cannot be adopted here. I have shown that at least in cases such as (4b) and (5c) the [NP,S] position cannot be present without violating some principle of grammar. On the other hand, assuming the optionality of the [NP,S] position seems inconsistent with the strict interpretation of the Projection Principle elaborated on above.

Viewed differently, however, the obligatory coindexing with Infl discussed earlier in this section may provide an answer to the conceptual problem just observed. Let us assume that it is exactly this coindexing, rather than the [NP,S] position, that is obligatory. In other words, the Infl node does not require the presence of a particular position; rather, it requires a coindexed NP in some position. Thus, one may assume that the following is an obligatory rule:

(47) Coindex NP with Infl in the accessible domain of Infl. (See below for the definition of accessible domain.)

In other words, I propose that the obligatory [NP,S] position required by the Extended Projection Principle should be replaced by an obligatory coindexing between Infl and some NP. Exactly in those cases in which the [NP,S] position is a $\bar{\theta}$-position, that position does not have to be generated. In those cases, however, there must be another NP that is coindexed with Infl, so as to meet the requirement in (47) and supply Infl with its *Infl-subject* (henceforth, *I-subject*). These are precisely the cases in (4b) and (5c): although these sentences contain an NP that is coindexed with Infl, it is not the [NP,S] position. In (4b) it is the sole argument of an ergative verb, generated as a sister of V, and in (5c)

it is the external argument of a verb base-generated as a sister of VP and assigned the external θ-role in that position.

Let us digress briefly and consider the conceptual status of the rule in (47). I assume that the requirement expressed by (47) is similar in status to lexical selection; that is, (47) expresses a selection feature of Infl. The relation expressed by (47) is reminiscent of the relation that holds between a Case assigner and the element to which that Case is assigned. Work reported in Koopman (1983) and Travis (1984) suggests that although lexical entries specify what features they assign (for example, what θ-roles and Case they assign), the position in which these features are assigned is determined by a general convention that governs the direction of feature assignment in a given grammar and is subject to parametric variation. Put differently, the assignment of Case to an NP is not specified as being met in a particular configuration; rather, the configurational relations between the assigner and the target are determined by independent factors, such as the assignment parameter.[27]

Now consider again the rule in (47) as an instantiation of such relations. Note that in the case of coindexing between the Infl node and the I-subject such relations may achieve not only Case assignment, but also identification.[28] As it is assumed that this coindexing relation by itself need not be met by a particular configuration, it is natural for the position of the I-subject to be determined by independent considerations. Al-

[27] Note that in null-subject languages the assignment of Case to the external argument may occur both in the [NP,S] position and in the VP. An attempt to reconcile these observations with a directional assignment is proposed by Stowell (1982), who argues that Case is assigned to the [NP,S] position from Comp. See also Koopman (1983). I will not pursue these issues here.

[28] An anonymous LI reviewer points out the following potential problem: if the coindexing between the Infl node and the I-subject may achieve both I-identification and nominative Case assignment, one does not expect the latter to be possible while the former is blocked in the same configuration. In view of this, Trentino, as discussed in Brandi and Cordin (1981) and Safir (1982; 1985), seems to present a problem. In Trentino, preverbal lexical subjects are accompanied by an agreeing subject clitic, whereas postverbal lexical subjects are not. Thus, it seems, subject clitics in Trentino provide direct evidence for the position of the subject of the sentence. As postverbal subjects in Trentino are nominative, one expects coindexing with Infl to be possible in that position, and consequently one expects I-identification to be possible as well. Thus, the configuration in (i) is predicted to be grammatical in Trentino, on a par with (ii):

(i) ...Ø-V...[e]...
(ii) ...Ø-V...NP(lexical)...

However, (i) is impossible, suggesting that the empty subject may not be I-identified in the postverbal position.

The problem, however, is only apparent. A situation in which nominative Case is possible but I-identification fails is not by any means rare, or contradictory to the system proposed here. In fact, this is precisely the situation in English, where Infl is strong enough to assign Case, but not strong enough to I-identify. Thus, it is very plausible to assume that a similar situation holds in Trentino, where Infl is strong enough to assign nominative Case (either preverbally or postverbally), but where, in the absence of the clitic, I-identification of null pronominals will fail. Accounting for the distribution of subject clitics in Trentino is outside the scope of this article, but as a descriptive generalization one might assume that the clitic occurs only when rule R did not apply, accounting for the unavailability of clitics in postverbal subject configurations. Given the system proposed here, I-identificatiion is sensitive to c-command of [e] by the I-identifier, not to government. Hence, [e] could be I-identified in structures such as (iii), as well as in structures such as (iv), in which it moves to the [NP,S] position, leaving behind a coindexed trace:

(iii) ...cl_i-V...$[e]_i$
(iv) $[e]_i$ cl_i-V...$[e]_i$

though the principle in (47) does not require the I-subject to occupy a particular position, the position of the I-subject may be structurally constrained by other components of the grammar. Thus, for instance, Infl must govern its I-subject in order to assign Case to it. Some crucial differences between different grammars follow from this fact alone. In English, if the I-subject appears in the VP, it can never be assigned nominative Case. Furthermore, I will assume that the I-subject, once coindexed with Infl, cannot enter any assignment relations with any other Case assigner. In this respect, the relationship between Infl and the I-subject is a *privileged relation*. Thus, in English an I-subject may never occur in the VP when it is lexically realized. On the other hand, an empty category functioning as I-subject in the VP in English would be ruled out, since it could not be I-identified (recall that Infl is not an I-identifier in English). It follows that in English the I-subject may not be empty and that it must occupy the [NP,S] position. The logical subject may appear in the VP, if it is coindexed with *there*. In the latter instance *there* itself satisfies the rule in (47), and Case can be transmitted from the [NP,S] position to the postverbal subject without violating the [illegible]ding conditions.

One structural constraint is placed upon the relationship between Infl and the I-subject, however: I assume that at D-Structure, when the rule in (47) must be satisfied, the I-subject must be in the *accessible domain* of Infl. Accessible domain is defined as follows:

(48) α is in the accessible domain of Infl_i iff Infl_i c-commands α and there is no β_j, β_j I-subject of Infl_j, such that Infl_i c-commands Infl_j and Infl_j c-commands α.

The rule stated in (47) is clearly intended to replace the requirement that sentences have subjects, expressed by the extended part of the Projection Principle. On the other hand, the status of (47) as expressing selection relations implies that (47) should come under the jurisdiction of the Projection Principle. Thus, Infl must have an I-subject at every stage of the derivation, as derived from the nature of the Projection Principle. (47) crucially differs from the Extended Projection Principle in allowing the I-subject to occur in different structural positions, a prediction that was proven right in the discussion of sentences such as (4b).

Before I turn to the discussion of various grammatical constructions and their interaction with the notion of I-subject, it is worthwhile considering the phenomenon known as "Burzio's generalization" in light of the rule in (47).

Burzio's generalization is the correlation observed in Burzio (1981), that whenever a verb assigns accusative Case, it selects a θ-role for the [NP,S] position (see section 3 for a detailed discussion).[29] It is worthwhile pointing out that the system proposed here makes a slightly different prediction, which is nevertheless empirically more adequate.

[29] Burzio (1981) actually states the correlation as a biconditional, claiming that whenever a θ-role is assigned to the [NP,S] position, accusative Case may be assigned. This claim is considerably more controversial. The discussion here is confined to the (unidirectional) correlation in the text.

Following the assumptions discussed above, it is not possible to assume that elements that are assigned accusative Case are I-subjects. As Case-assignment relations are privileged relations in the sense discussed above, it is clear that an accusative NP may not be coindexed with Infl. On the other hand, the rule in (47) requires there to be an I-subject wherever Infl is present. It follows that when accusative Case is assigned and Infl is present, there must be an I-subject distinct from the accusative NP. On the other hand, that I-subject need not be assigned a θ-role, and it might be a pleonastic. In this the prediction made here is very different from the prediction made by Burzio's generalization. Recall, however, that sentences that violate Burzio's generalization are attested in substandard Hebrew (see (21)–(23)). In these sentences accusative Case is assigned and no θ-role is assigned to the [NP,S] position. As the empty element in the [NP,S] position triggers a particular verbal agreement, it is natural to assume that it is occupied by an empty pleonastic element that functions as the I-subject, thus satisfying (47). I have further argued that a similar situation holds in English when no agreement is attested in *there* constructions (see (24b) and related discussion). There, as well, accusative Case is assigned, but no θ-role is available to the [NP,S] position. (47), though, is satisfied by the pleonastic *there*.[30]

Yet another example in which Burzio's generalization is violated but the principle in (47) is maintained is found in Spanish, where the following constructions are grammatical:

(49) a. Hay montañas en Sudamerica.
exist-sg-m mountains in South America
'There are mountains in South America.'

b. Montañas bonitas, las hay en Sudamerica.
mountains nice them exist in South America
'As for nice mountains, there are such in South America.'

In (49) the postverbal NP is assigned accusative Case, as is attested by the availability of an accusative clitic attached to the verb in (49b). Nevertheless, the subject position is not assigned a θ-role. On the other hand, the specific agreement attested on the verb (singular masculine) indicates that the [NP,S] position is not empty. Rather, it is occupied by an empty pleonastic serving as the I-subject.

7. S′-Deletion Revisited

In this section I will consider some of the consequences of the I-subject notion for various constructions in the grammar. Among these, I would like to concentrate on infinitival constructions and consider the way in which the notion of I-subject interacts with regular infinitives, infinitival clauses that follow so-called exceptional governors (i.e. raising

[30] It might be that a similar situation holds in *il* constructions in French, discussed in section 4. However, as it is not clear whether accusative Case (as opposed to some general objective Case) is actually assigned to the postverbal NPs, it is not clear whether they fall under Burzio's generalization (see footnote 19 for some discussion).

verbs and exceptional Case markers), and *for*-infinitivals. I will show that the rule of "S′-Deletion" associated with particular lexical entries (e.g. *believe* and *seem*) may be dispensed with at no empirical cost, and that the range of phenomena explained by S′-Deletion may be explained by appealing to the notions of I-subject and privileged relationship explicated above. Before I turn to infinitives, however, it is worthwhile comment briefly on the implications that the notion of I-subject has for NPs.

The Extended Projection Principle is intended to capture the contrast illustrated in (45)–(46)—that is, the fact that subjects are obligatory in clauses, but not in NPs. It is clear that given the rule in (47), the same result can be achieved easily: the optionality of the subject in NPs versus its obligatoriness in sentences derives now not from the requirement that clauses have subjects, but from the requirement that Infl have a co-indexed argument. In the absence of an Infl node, one does not expect the subject position to be obligatory. The results obtained by the Extended Projection Principle can thus be captured easily by the I-subject system. The relevant distinction between NPs and gerunds in this respect can be captured just as simply. The latter, but not the former, are projections of Infl, and, in the presence of Infl, there is also an I-subject. The obligatoriness of subjects in gerunds follows. (This conclusion is compatible with the research on gerunds reported in Reuland (1983a).)

7.1. The Infl Node in Infinitives

Consider now the obligatoriness of subjects in infinitival structures. It is a natural assumption within the model proposed here that infinitives contain an Infl node. Under the assumption that S is a projection of Infl, any other conclusion would be problematic. On the other hand, the availability of an Infl node in infinitives enables the I-subject to be obligatory, as it is in gerunds. That infinitives have an Infl node has been argued independently by Stowell (1982). Stowell observes that infinitives tend to have an "unrealized future" reading. Surprisingly, this reading is entirely missing when the matrix verb is an S′-Deletion verb, in the sense of Chomsky (1980). Thus, consider the contrast between (50) and (51):

(50) a. John decided to grow roses.
b. John asked Mary to grow roses.
(51) a. John believes Mary to have grown the winning rose.
b. John tends to grow roses in his spare time.

Though in (50a–b) the act of rose growing—if it is to take place—would be subsequent to the acts of deciding or asking, such is not the case either in (51a), where the rose growing—if it took place—preceded the act of believing, or in (51b), where it is concurrent with the action denoted by the verb *tend*. Stowell observes that the contrast between (50) and (51) may be explained naturally if one assumes that the "unrealized future" reading in (50)—or, for that matter, any tensed reading—is obtained when the Tense node is raised to the Comp position, thus acquiring scope over the clause. Whereas

this is a possible operation for (50a–b), it is not possible for (51a–b), since the S′-Deletion operation has deprived the subordinate clause of a Comp. The systematic distinction in interpretation follows directly. On the other hand, Stowell's analysis clearly implies that infinitives must have an Infl node, which contains Tense. In the presence of Infl, the availability of I-subject (and, in fact, its obligatoriness) follows immediately.

In what follows I will adopt the essence of the structure that Stowell proposes for regular infinitival complements. I will deviate, however, from Stowell's analysis of S′-Deletion infinitivals. Concretely, I will argue that there is no rule of S′-Deletion, and that the absence of Comp in sentences such as (51a–b) as well as the availability of so-called exceptional government of the subordinate [NP,S] position are both made possible by the same factor: namely, that the Infl node in the infinitival complements of verbs such as *believe, tend, seem,* is "degenerate" in a sense to be made precise below.

Before I proceed, however, I would like to digress briefly and consider the distribution of subjects in a variety of categories.

7.2. Small Clauses and Exceptional Government

Stowell (1983) argues that all categories have subjects. It is this theorem that is to account for the properties of small clauses. Thus, in (52a–c) *John* is the subject of an AP, a PP, and a VP, respectively:

(52) a. I saw [$_{AP}$ John drunk].
b. I saw [$_{PP}$ John in the garden].
c. I saw [$_{VP}$ John run].

Stowell further observes that the subject position of APs, PPs, and VPs is available for exceptional government. Thus, in (52a–c) it is the verb *see* that assigns Case to *John* across a maximal projection, resembling in this respect the exceptional assignment of Case to *Mary* in the [NP,S] position in sentences such as (51a). Further support for the fact that the position is governed is the fact that PRO may not appear there. Assuming the PRO Theorem proposed in Chomsky (1981), according to which PRO may not be governed, the ungrammaticality of (53a–c) is explained:

(53) a. *I saw [$_{AP}$ PRO drunk].
b. *I saw [$_{PP}$ PRO in the garden].
c. *I saw [$_{VP}$ PRO run].

The ungrammaticality of (53a–c) is on a par with the ungrammaticality of (54):

(54) *John believes [PRO to have grown the winning rose].

Thus, it is clear that the subjects of infinitival complements of exceptional governors pattern with the subjects of small clauses. It is worthwhile to note at this point that the obligatoriness of the subjects in (52a–c) does not follow from any principle requiring a subject to appear in the structure (such as the Extended Projection Principle). Rather,

it follows simply from the fact that the lexical head of the small clause (A, P, or V) assigns a θ-role to its external argument in these clauses.[31]

Although the standard approach classifies the cases in (51a) and (52) as "exceptional," consider the reverse possibility. Let us assume that all verbs may govern into the specifier position of a lexical category. (It is crucially assumed here that Comp is the specifier of Infl, an assumption to which I return below.) Let us assume this to be the case regardless of whether the lexical projection in question is maximal or not. Following this system, in configurations such as (52a–c) *John* is governed by the verb *see* without utilizing any exceptional mechanism, as is the case with the embedded subjects in (51a–b). Similarly, the ungrammaticality of (53a–c) follows from the presence of a governed PRO. Let us further assume that any verb subcategorizing for an infinitival complement selects, in fact, for a nonspecified S-type boundary, that boundary being optionally an S′ or an S. If S′ is selected, the matrix verb will be allowed to govern into the Comp position. On the other hand, if S is selected, the matrix verb will govern the embedded subject. Note, now, that the mechanism utilized here is rather different in nature from S′-Deletion. Rather than proposing that a process of node pruning is associated with a particular verb, we now assume that any verb may select an S rather than an S′, and that the selection of S illustrated by *believe* and *tend* is nonexceptional. Within the system proposed here, the burden of capturing the exceptionality of verbs such as *believe* and *tend* will be placed elsewhere: I will assume that so-called exceptional governors are different from other complement-taking verbs in selecting a clause with a degenerate Infl node. Specifically, the degenerate Infl node does not undergo the I-subject rule in (47). Consequently, the subordinate subject is not an I-subject, and it does not enter privileged relations with its Infl node. It is this fact that allows it to enter Case and proper government relations with the matrix verb.

[31] The notion *external argument* is used here in the sense of Williams (1980; 1981). Note that the θ-Criterion cannot be used to explain the obligatoriness of the pleonastic *it* in (i):

(i) John considers it plausible to grow roses.

I assume that the obligatoriness of *it* in (i) derives from viewing the Case Filter as a condition on assignment relations, rather than a condition on NPs. This is in the spirit of Manzini (1983). Effectively, this renders the pleonastic element *it* obligatory in (i), since Case assignment by *consider* is obligatory, and hence there must be an NP to which *consider* would assign Case. It is interesting to note that this obligatoriness is language-specific, and quite independent from the licensing of null subjects. In French, a non-pro-drop language, the sentence corresponding to (i) is ungrammatical, whereas the omission of the pleonastic in the small clause is entirely grammatical, as is illustrated by (iia–b). This is particularly striking, since Case marking into the subject position of small clauses is possible in French, as is illustrated by (iiia–b):

(ii) a. *Jean le considère possible que Marie est malade.
Jean it considers possible that Marie is sick
'Jean considers it possible that Marie is sick.'
b. Jean considère possible que Marie est malade.
Jean considers possible that Marie is sick

(iii) a. Jean le considère malade.
Jean him considers sick
b. Jean considère Marie malade.
Jean considers Marie sick

Consider the concrete application of such a system. First, let us return to the regular infinitival complements, following verbs that are not exceptional governors. These were illustrated in (50a–b). Consider the possibility that the verbs *decide* and *ask* select an S node rather than an S′ node. The relevant representation is given in (55):

(55) a. *John decided [$_S$[e] to grow roses].
b. *John asked Mary [$_S$[e] to grow roses].

The sentences in (55) are ungrammatical, since the [e] in the embedded [NP,S] position does not meet independently motivated grammatical conditions. It cannot be a PRO, since it is governed by the matrix verb. It cannot be an anaphor, since it may not have an antecedent in a $\bar{\theta}$-position in configuration in (55a–b). It may not be a variable, since there is no operator to bind it.

Notice that one would expect (55a–b) to be grammatical if the empty [NP,S] position is bound by a moved antecedent in, say, a passive construction. The relevant (ungrammatical) sentence is (56):

(56) *John$_i$ was tried [$_S$[e]$_i$ to grow roses].

The ungrammaticality of (56) is no surprise. The A-chain composed of *John* and its trace in (56) functions as the I-subject of two distinct Infl nodes: the matrix Infl and the embedded Infl. Under the natural assumption that such a state of affairs leads to ungrammaticality, the status of (56) is explained.

Now consider the possibility of substituting a lexical NP for the [e] in (55a–b):

(57) a. *John decided [$_S$ him/himself/Mary to grow roses].
b. *John asked Mary [$_S$ her/him/Bill to grow roses].

The lexical NP in the embedded [NP,S] position in (57) may not be assigned Case. This is because it is coindexed with its own Infl and therefore may not enter any other assignment relations. Thus, even if the matrix verb is an (accusative) Case assigner, the actual assignment of Case would be blocked as a result of the privileged relations established between Infl and its I-subject. As Infl in infinitival clauses may not assign Case, there is no way for its I-subject to receive Case, and the sentences are ungrammatical. Given the independent reasons for the ungrammaticality of (55a–b), (56), and (57a–b), it is clear that the verbs *decide* and *ask* must select an S′. The selection of S would always lead to ungrammatical derivations.

Finally, consider cases of so-called exceptional governors. First consider the generation of an empty category in the embedded [NP,S] position. This situation is illustrated by (58):

(58) *John believed [$_S$[e] to have grown the winning rose].

The ungrammaticality of (58) is exactly on a par with the ungrammaticality of (55a–b). The [e] in the embedded [NP,S] position may not be PRO, an anaphoric [e], or a variable. On the other hand, the empty category could be well-formed if it were anaphoric and

bound by an element in a $\bar{\theta}$-position. This state of affairs is exactly what is attested in sentences such as (59a–c):

(59) a. John$_i$ tends [$_S$[e]$_i$ to grow roses].
b. John$_i$ seems [$_S$[e]$_i$ to like roses].
c. John$_i$ is believed [$_S$[e]$_i$ to like roses].

In (59a–c) the embedded [NP,S] is not an I-subject. This is following the assumption that the unique characteristic of so-called exceptional governors is the selection of a degenerate Infl node. Consequently, the A-chain formed between *John* and its trace does not serve as the I-subject of two separate Infl nodes: it serves only as the I-subject of the matrix Infl. The contrast between (59a–c) and (56) is now accounted for.

Consider now the situation in which an overt lexical NP occupies the embedded [NP,S] position. As expected, this state of affairs leads to grammaticality only when that overt NP may receive Case from the matrix verb, as in (51a). On the other hand, if *seem* and *tend* are followed by an overt NP, ungrammaticality results, since that NP may not be assigned Case.

As a last step, consider the ungrammaticality of the following sentences:

(60) a. *John believes [$_{S'}$[$_S$ PRO to love roses]].
b. *It seems [$_{S'}$[$_S$ PRO to love roses]].

In (60a–b) a "degenerate Infl" selector is selecting an S′ boundary, rather than an S boundary, allowing the occurrence of an ungoverned PRO in the embedded [NP,S] position. Nevertheless, (60a–b) are ungrammatical. But note now that given the reduction of control to the binding conditions sketched in section 5.3, the ungrammaticality of (60a–b) can be accounted for, since control effects are blocked when degenerate Infl is present. The failure of "control" in (60a–b) leads to a PRO that is not I-identified, and consequently to ungrammaticality. Recall that control is not a relationship between a controlling NP and a PRO (i.e. another NP); rather, it is a relationship between an antecedent NP and an anaphoric Agr node. Once the anaphoric Agr is A-bound, the i-features inherited by the anaphoric Agr from its antecedent serve as I-identifiers of the PRO node. This is achieved precisely because the PRO of infinitives is the I-subject of its Infl and is thus coindexed with it. Assuming that analysis to be correct, consider again (60), where, it is assumed, the PRO in (60a) should fall under standard control, whereas the PRO in (60b) should receive an arbitrary interpretation. As the matrix verb in these cases selects a degenerate Infl, there is no coindexing between Infl and the PRO. It follows that the PRO in (60a–b) cannot be I-identified, and consequently the sentences are ruled out. Thus, the ungrammaticality of (60a–b) follows again from the same factor: the degenerate status of Infl. As Infl is degenerate, it may not have an I-subject, and in the absence of the I-subject relationship, the index transmitted to Agr from a matrix binder may not be passed on to PRO. Note, at this point, that even if the infinitival Infl in (60b) is assigned default *arb* (see footnote 24), the derivation would not

be saved, since this *arb* index may not be transmitted to the [NP,S] position, that position not being an I-subject.

It thus follows that although the selection of S or S′ is free, only verbs that select a degenerate Infl may have an S complement, and only verbs that do not select a degenerate Infl may have an S′ complement. It is interesting to note here that the observations made by Stowell (1982) with respect to the status of Tense in S complements versus its status in S′ complements follow now with no further stipulation: whereas "degenerate Infl infinitives" may not have a Comp node, and thus may not have an unrealized future reading, regular infinitives *must* have a Comp node, and thus that reading is always available. It is also interesting to note that the two accompanying properties of exceptional governors follow in a straightforward way from the system proposed here: either exceptional governors might be verbs that do not select a subject θ-role, thus allowing the embedded [NP,S] position to move into the matrix [NP,S] position, or they might be verbs that assign Case without an accompanying θ-role assignment, thus allowing the embedded [NP,S] position to be overt. It is easy to see that any other combination would result in ungrammaticality within the I-subject model.

7.3. Long-Distance Agreement

The system proposed here makes an interesting prediction: given the availability of degenerate Infl nodes that do not participate in rule (47), one expects cases where a matrix Infl selects an I-subject in an embedded clause, providing that embedded clause is headed by a degenerate Infl. As degenerate Infl nodes do not select an I-subject, the accessible domain of the matrix Infl would extend so as to contain the embedded clause, thus potentially selecting NPs in it as I-subjects. Exactly this kind of situation is attested in both Hebrew and Italian. Consider the following sentences:[32]

(61) a. Hitxil la-redet geshem.
started-sg-m to-fall rain-sg-m
'It started raining.'

b. Hitxilu la-redet gishmey xoref.
started-pl-m to-fall rains winter
'Winter rains started falling.'

(62) Sembrano esserne arrivati molti.
seem-3-pl to-be-of-them arrived many
'It seems that many of them arrived.'

Both in the Hebrew examples (61a–b) and in the Italian example (62) the same phe-

[32] The construction in (62) is discussed extensively by Burzio (1981), who argues for the formation of a chain between the postverbal NP and the embedded [NP,S] position. The pleonastic element that heads the chain is then raised into the matrix [NP,S] position, giving rise both to nominative Case and to agreement. For reasons that were made clear in the preceding sections, such a derivation would result in a violation of binding condition C and hence cannot be adopted in this work.

The Hebrew data were pointed out to me by Edit Doron (personal communication).

nomenon is attested: the matrix verb, a raising verb, agrees in gender, number, and person with a nonraised NP, which does not appear to be in its immediate domain. In Italian, as discussed in Burzio (1981), there is direct evidence that the nonraised NP is not raised and then postposed. Such evidence involves the cliticization of *ne* to the embedded verb, a strictly local phenomenon that is sensitive to the presence of an NP in the VP and that cannot occur when the subject is adjoined to the VP (whether it is base-generated there, as is assumed here, or postposed from the [NP,S] position. See Burzio (1981) for discussion of *ne* cliticization in these cases. For additional interesting comments, see Belletti and Rizzi (1981), Elliott (to appear)). The evidence for nonraising in Hebrew is somewhat less direct, but can be adduced from the presence of a strong definiteness effect in (61a–b). Definiteness effects in Hebrew are considerably stronger in cases of ergative postverbal subjects than in cases of so-called postposed subjects, the latter also being distinguished by a different intonation pattern. Thus, consider the following contrast:

(63) a. *Hitxil la-redet ha-geshem.
started to-fall the-rain

b. *Hitxilu la-redet ha-gshamim ha-xorpyim.
started to-fall the-rains the-wintery
'The winter rains started falling.'

(64) a. ?Hifti'a 'oti ha-geshem.
surprised me the-rain
'The rain surprised me.'

b. Hifti'a 'oti ha-tguva shel-o.
surprised me the-reaction of-his
'His reaction surprised me.'

Typically, such long-distance agreement is attested only with raising verbs—that is, verbs that select a degenerate Infl node. But this is exactly what is to be expected, given the system proposed here: in the absence of an embedded Infl node that establishes an I-subject relationship, the matrix Infl may search for its I-subject in the domain of the embedded degenerate Infl, resulting in the situation illustrated by (61)–(62). In essence, then, the Infl node in raising constructions may either select its own [NP,S] position as I-subject or search for it in the domain of the degenerate Infl. If the former takes place, the embedded NP must be raised into the matrix [NP,S] position, so as to receive Case, since coindexing and nominative Case assignment will only take place in that position. On the other hand, if the matrix Infl selects the embedded NP as its argument, I-subject relations are established and no movement is required.

An interesting residual question concerns the assignment of nominative Case in (61)–(62). Strictly speaking, the matrix Infl does not govern its I-subject in these constructions, and the question arises with respect to nominative Case assignment. I will assume that once rule R applies, the Case-assignment features of the nominative Case features of the matrix Infl may percolate down to the degenerate Infl node, creating the government

configuration necessary for nominative Case assignment. This is made possible precisely because the Infl node is degenerate and does not participate in any I-subject relations. In essence, then, the matrix Infl and the degenerate embedded Infl form a chain of sorts, enabling the lower member of that chain to govern and assign nominative Case to the embedded subject.[33] Note, incidentally, that this situation is only possible in languages that allow for rule R in the syntax and subsequently for the nongeneration of the [NP,S] position. As the postverbal NP is coindexed with Infl, it may only be assigned nominative Case, and such assignment is only possible if rule R has applied. It is not surprising, then, that such a situation is not attested in English. On the other hand, the fact that constructions such as (61)–(62) are attested in the grammar supplies strong evidence for the system presented here: it is predicted that exactly in one domain such phenomena will be attested, and indeed, they are.

As a last issue, consider the following ungrammatical sentences:

(65) a. *Hitxilu *geshamim* la-redet.
started-pl rains to-fall
b. *Sembrano molti studenti essere arrivati.
seem many students to-be arrived

The ungrammaticality of (65a–b) is on a par with the ungrammaticality of (66):

(66) *There seems *a man* to arrive.

To the best of my knowledge, no explanation is available for the ungrammaticality of (65)–(66) within a framework that assumes chains. Within such a framework, it is not clear why a chain cannot be formed between the matrix [NP,S] position and the embedded [NP,S] position, resulting in the transmission of Case. Within the model proposed here, I will make the following auxiliary assumptions in order to account for these facts. First, I will assume that since the I-subject is in the domain of the embedded Infl (albeit a degenerate one), that Infl must be the assigning agent. Hence, the formation of an "Infl-chain" of sorts is obligatory in these cases. I will further assume, following Jaeggli (forthcoming), that the ungrammaticality of (65a–b) reflects an additional constraint on the percolation of nominative Case from the matrix Infl to the embedded degenerate Infl. Concretely, the degenerate Infl may not by itself assign Case, but it is required to have the additional force of the verb in order to do so. It follows that Case may be assigned to the nonraised NP only if rule R has applied, attaching the degenerate Infl to the verb and giving it the necessary additional force. On the other hand, the application of rule R, coupled with the requirement that the embedded Infl be the agent of assignment, results in the availability of nominative Case assignment in the postverbal position exclusively. The ungrammaticality of (65a–b) follows. Note, incidentally, that it is not

[33] It appears that the sentences corresponding to (61)–(62) are ungrammatical in Catalan, otherwise exhibiting identical behavior (see Picallo (1985)). Such a variation could be explained naturally if one assumes that Catalan, for reasons unexplained here, does not allow for the percolation of nominative Case from the matrix Infl to the embedded degenerate Infl. I am grateful to Osvaldo Jaeggli for pointing this out to me.

immediately obvious how such an analysis can be used to account for the ungrammatical (66), where Case is assigned by the formation of a chain. The ungrammaticality of (66), clearly on a par with that of (65), thus suggests that there are additional conditions on the transference of Case in chains that mirror those of the transference of Case from a matrix Infl to an embedded Infl. Pursuing a proposal along such lines would entail that Case might be transferred from one member of a chain to another only if the NP to which Case is transferred meets independently required conditions on Case assignment—that is, if it is governed by a category that is a potential Case assigner. I will not pursue this proposal further here.

7.4. For-*Infinitives*

As a last point, consider the availability of the preposition *for* as a Case assigner in configurations such as the following:

(67) a. For John to win would be a disaster.
b. I hope for John to grow the winning rose.

I argued above that in infinitives as well as in regular clauses a privileged relation holds between Infl and its I-subject, barring any further relations between that I-subject and other feature assigners. Nevertheless, it is clear that within such a system the complementizer *for* has a special status; it alone may assign Case to an I-subject in the [NP,S] position of an infinitive. A natural question might be raised with respect to the source of this special status, and I would like to propose that it is acquired by virtue of the fact that the Comp is the specifier of Infl, and that *for* occupies that specifier position. The assumption that Comp is the specifier of Infl is easy to justify. Thus, under the natural assumption that specifiers and their heads are coindexed, one may give a unified treatment to the specifier-head agreement phenomenon attested in NPs and the obvious fashion in which particular complementizers agree with the type of Infl selected by their clause (see Bresnan (1972) for detailed discussion). It is well known that the complementizer *that* cooccurs with an indicative clause, whereas *for* occurs with infinitivals. In Arabic, for instance, the complementizer *'an* cooccurs with subjunctives, whereas the complementizer *'anna* cooccurs with indicatives; and so forth. (Of course, other explanations for this selection are possible as well. The detailed exclusion of other accounts will not be undertaken here.)

If it is assumed that *for* is the specifier of Infl in structures such as (67), it is clear why only the complementizer *for* may assign Case to the [NP,S] position: being the specifier of the very Infl with which the I-subject is coindexed, it is not really distinct from that Infl and its assignment relation with the I-subject is not a violation of the privileged relationship.

8. Conclusion

This article represents an attempt to view in a different light several grammatical processes, all of which are well documented in the literature. In particular, it seeks to

redefine the notion of a subject not with respect to a hierarchical position in a tree structure, but rather in terms of the relationship that it has with the Infl node, the head of its sentence. Focusing on the subject as an argument of Infl has led to the discussion of several other related phenomena: the assignment of nominative Case, identification of empty categories, and the system of exceptional government. It was further proposed that a proper typology of pleonastic elements is to be achieved in terms of their interaction with the binding conditions, within a system of unified indexing. Though this research is based primarily on previously discussed data, some new data were brought forth, showing the system proposed here to be preferable empirically as well as theoretically.

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