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Pronominal clitics in Romance may either precede or follow the verb they are associated with, depending on a number of factors, some of which I shall try to elucidate in this article. My analysis will take Romance clitics to invariably left-adjoin to a functional head. In cases where that functional head dominates the verb, this will straightforwardly yield the order clitic-verb. The order verb-clitic will, on the other hand, be claimed to result from the verb's having moved leftward past the functional head to which the clitic has adjoined (rather than having the clitic right-adjoin to the verb). I shall focus on the question of clitic/verb order as it applies to embedded sentences, leaving for future work certain extra possibilities that appear in root sentences such as imperatives, and in certain other types of root sentences in languages such as Portuguese and Galician.

The order verb-clitic is found in embedded infinitives in Italian, but not in French. I shall take the Italian infinitive to move leftward past the clitic and to adjoin to the single-bar projection whose head the clitic has adjoined to. In the case of control infinitives this will produce a structure in which the controlled subject PRO is governed by the infinitive. I shall claim that government of PRO by the infinitive always holds in Italian (not only in the presence of a clitic). Such government is not compatible with Chomsky's *Lectures on Government and Binding (LGB)* theory of PRO, but I shall argue that it is compatible with, and in fact supports, a particular interpretation of the modification of the *LGB* binding theory that Chomsky has suggested in *Knowledge of Language*.

More specifically, I shall argue that controlled PRO is always governed and, paradoxically, that the PRO theorem nonetheless continues to hold to a significant degree of generality and continues to play a major role in determining the distribution of PRO.

I shall claim further that this approach makes better sense of the little-studied contrast with respect to control between *whether* and *if*, and in particular of the corresponding complex array of data in Romance, than alternative approaches to control. If this is correct, then we will have found evidence in this area to support the general

approach to PRO that takes its distribution to follow from binding theory (and hence for the specific analysis of PRO as being simultaneously anaphoric and pronominal), as well as having found evidence for the presence of an element PRO in syntactic representations.

1. Romance Clitics

1.1. Infinitives

French and Italian differ in that French clitics precede embedded infinitives whereas Italian clitics follow them:

(1) Lui   parler   serait   une erreur.
     him$_{DAT}$ to-speak would-be an   error
(2) *Parler-lui serait une erreur.
(3) Parlargli   sarebbe   un errore.
     to-speak him$_{DAT}$ would-be an error
(4) *Gli parlare sarebbe un errore.

A possible approach to this contrast would be to distinguish the two languages in terms of type of adjunction: French would left-adjoin its clitics to the infinitive whereas Italian would right-adjoin its. In Kayne (1989a, 241) I rejected this approach, in part because it would allow no interesting account of the fact that Italian does not permit its clitics to follow a finite verb:

(5) Sarebbe   assurdo che tu   gli   parlassi.
     it-would-be absurd   that you him$_{DAT}$ spoke
(6) *Sarebbe assurdo che tu parlassigli.

The contrast between (3) and (6) will turn out to be indirectly related to the fact that the embedded verb in (6) is specified for both agreement and tense, whereas the infinitive of (3) is not. We can note immediately, however, that no simple statement of the sort "A clitic may not follow an agreeing verb form" would suffice (even descriptively), since the order verb-clitic is possible with Portuguese infinitives, even with those that show agreement, and since clitics may follow agreeing finite verbs in Portuguese root clauses, as well as in both French and Italian imperatives. Similarly, there is no simple prohibition against a clitic following a tensed verb, as seen again in Portuguese root clauses, as well as in a Friulian construction to be discussed below.

On the basis of these considerations and others that will follow, I continue to consider that an approach to (1) versus (3) in terms of left- versus right-adjunction of the clitic is not to be pursued. This leaves us, in turn, with the question of why right-adjunction is not available to object clitics. One possible answer would be that right-adjunction is not available at all, but that seems too strong a position to take, especially thinking of Chung and McCloskey's (1987, 195) discussion of pronoun postposing in Irish, as well as Rizzi's (1982, chap. 4) and my (1980b, sec. 2.2) analysis of subject

inversion/postposition in French and Italian.[1] A potentially more promising answer would be to generalize Williams's (1981) proposal about right-headedness in morphology to instances of X^0 constituents created by adjunction. If such constituents must be right-headed (at least in languages of the sort under discussion), then adjunction to X^0 must always be left-adjunction, given the standard interpretation of adjunction as creating a category of the same type as the element adjoined to.[2]

I am assuming that Romance clitics have the (perhaps defining) property that they must adjoin to some X^0 element.[3] Let us assume further, at least for the purposes of exposition, that they must adjoin to a nonlexical X^0, that is, to a functional head.[4] Thus, in (5) the clitic *gli* has adjoined to the functional head position in which the verb is found as a result of V-to-I movement of the familiar type (for discussion, see Chomsky (1986a) and Pollock (1989)). The same will be true of *lui* in (1), assuming the verb to move out of VP in French infinitival structures, as Pollock (1989, sec. 2.4.1) argues.

Turning to (3), we see that if *gli* there is not right-adjoined to the infinitive itself, then it must be left-adjoined to some empty head position. It seems unlikely that that position could be that of the V-trace within VP, since that would amount to allowing a trace to be a proper subpart of an X^0 constituent (see Baker (1985, 89) and Emonds (1985, 198)). Furthermore, that would prevent us from making the required distinction between infinitives and finite verbs (that is, if the clitic were adjoined to the V-trace in (3), why would this not be possible in (6)?)[5] We conclude, instead, that *gli* in (3) must be left-adjoined to an empty I-type position. Moreover, the preceding considerations that count against the idea of having a clitic adjoined to a V-trace carry over to the idea that a clitic might be adjoined to an I-trace. In other words, the empty I position to which the clitic is adjoined in (3) must not have been moved through by the infinitive.

This leads to the following representation,

(7)　. . . V . . . Cl + I . . . [$_{VP}$[$_V$ e] . . .] . . .

in which the clitic has adjoined to I and V has moved leftward, skipping over I. I would like to propose that in so doing, V adjoins to I' (I-bar). (I return to the implications for

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[1] Also see Haegeman and Van Riemsdijk's (1986) discussion of Germanic (rightward) verb projection (perhaps always VP; see Kayne (1985, note 43)) raising.

[2] An account in terms of headedness would not be compatible with my (1983b, sec. 5) claim that French subject clitics cliticize to the right of a preceding finite verb in the syntax. (A similar question arises with respect to Germanic subject pronouns that appear to cliticize to a complementizer; see, for example, Bayer (1983).)

My proposal that Romance object clitics never right-adjoin is very likely not compatible with Uriagereka's (1988) analysis of Galician articles as undergoing syntactic cliticization, nor with the particular way in which he pursues his important attempt to account for the relative order of accusative and dative clitics.

[3] See Baltin (1982, 4). I shall hold strongly to this assumption as far as the languages of France and Italy are concerned. The extra finite verb–clitic possibilities in Portuguese and Galician might perhaps reflect adjunction to X^1, as suggested in Kayne (1988). Similarly, perhaps, for Romanian; see Dobrovie-Sorin (1990).

[4] The existence in Old Italian and in certain North Italian dialects of preposition-clitic, as noted by Renzi (1989, 369), would then imply that at least some PPs could be embedded under a functional X^0, to which a clitic could adjoin, and past which P could move.

[5] As in the previous paragraph, I·suspect that a clitic may not be adjoined to a filled V position, either (as opposed to a filled, or empty (in the sense given below), functional head position).

PRO in section 2.) Adjunction of the infinitive to I' is compatible with Chomsky's (1986a, 73) discussion of restrictions on head movement.[6] As far as Chomsky's (1986a, 42) Minimality Condition is concerned, I' will not count as a Minimality barrier for V by virtue of V's having adjoined to it.[7]

We are now in a position to return to the contrast between (3) and (6), that is, to the question of why V in (7) can be an infinitive but not an embedded finite verb. I adopt a suggestion made to me by Esther Torrego in response to an earlier presentation of this work, namely, that finite verbs cannot mimic infinitives here because the former, unlike the latter, must pick up a suffix corresponding to each functional head. In effect, my earlier claim that I in (7) cannot be a trace (also see Kayne (1989a, sec. 9)) means that the I in (7) corresponds to a functional head position that V need not move through. Put another way, my proposal concerning the structure of sentences with verb-clitic order requires that there exist such an abstract I for the clitic to adjoin to. Torrego's idea amounts to saying that in finite sentences there can be no such abstract I.

In the context of Pollock's (1989) proposals concerning multiple I positions, more must be said, however. If in certain cases there can be two I positions, . . . I_1 . . . I_2 . . . V . . . (for example, Agr and T(ense)), such that V must move through both, then it is true that the clitic has no (nontrace) empty I position to attach itself to and so must adjoin to the I position in which the verb finds itself at S-Structure. What needs to be said further is that Universal Grammar (UG) does not permit the use of a "wild card" I-type node (call it I_W) that could appear in a representation like . . . I_W . . . I_1 . . . I_2 . . . V . . . in such a way that the clitic could adjoin to I_W, while V moves through the two usual nodes (Agr and T) and subsequently adjoins to I_W', yielding the order . . . V . . . Cl + I_W . . . with V an embedded finite verb. Let us assume, then, that UG permits empty I nodes of only two types: (a) traces (to which a clitic may never adjoin) and (b) nontrace abstract I nodes that are the nonovert counterpart of an otherwise legitimate I-type category. More specifically, (b) will allow an abstract T or an abstract Agr, but if T and Agr are the only two functional categories that appear in embedded Ss,[8] then (b) allows for nothing else. Given this restriction on available I nodes, the absence of embedded V-Cl order in the case of finite verbs will follow from the unavailability of any free I node for Cl to adjoin to, as a function of the fact that a finite verb must merge with both T and Agr.

In (7), on the other hand—that is, in the case of infinitives—we can take Cl to adjoin to the free I node that is available by virtue of the infinitive's not being obliged to merge with both T and Agr.[9] The precise identity of the free abstract I node in (7) is not

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[6] My earlier (1990) proposal that V adjoins to IP fit in less straightforwardly.

[7] Again, this is more straightforward than under my (1990) proposal of adjunction to IP.

[8] Recall that Portuguese and Galician do allow in root contexts the order finite verb–clitic, suggesting either the existence of another I-type node limited to root contexts (a possibility explored in Uriagereka (1988)) or the adjunction of clitics to a root C (*root* here must be taken in a somewhat extended sense; see Uriagereka (1988)); also see footnote 3 above. Equally beyond the scope of this article is the potential category M as discussed by Rivero (1988).

[9] The idea of an I node not obliged to merge with V is supported by an English construction discussed in Kayne (1989b).

immediately clear, however, since the infinitive verb shows neither an overt Agr suffix nor an overt T suffix in Italian. For much of what follows, the exact label of the free I to which Cl attaches in (7) will not be relevant. For concreteness, let us tentatively take it to be T, rather than Agr.[10] Let us in addition follow Raposo (1987) in taking the infinitival -r(e) suffix of Italian and French to correspond to a functional head having nominal properties, somewhat like English -ing. Calling this element Infn and adding it to (7), we arrive at the more highly specified representation in (8),

(8) *Italian*
　　　. . . V + Infn . . . Cl + T . . . [$_{Infn}$ e] . . . [$_{VP}$[$_V$ e] . . .

in which V has adjoined to Infn and V + Infn has then adjoined to T′.

From this perspective, French infinitives will involve raising V to Infn, but will not involve any additional movement of the V. Furthermore, instead of adjoining to T, as shown in (8) for Italian infinitives, Cl in French will adjoin to Infn:

(9) *French*
　　　. . . T . . . Cl + [$_{Infn}$ V + Infn] . . . [$_{VP}$[$_V$ e] . . .

On the assumption that certain adverbs can be generated between Infn and VP (for instance, left-adjoined to VP), the raising of V to Infn will have the effect of moving V across those adverbs, much as in Pollock (1989, sec. 2.4), while leaving open the question of why there is no comparable raising of V to Infn in mainland Scandinavian.[11]

Consider now the case of adverbs or similar elements generated (or subsequently placed) between T and Infn (for example, left-adjoined to Infn-P). V-to-Infn raising will not change the relative order of such adverbs and the verb, so that in French they will appear at S-Structure to the left of the infinitive. In Italian, on the other hand, the infinitive moves again, left-adjoining to T′. This additional movement will carry the infinitive to the left of any adverb occurring between T and Infn. Put another way, Italian will differ from French, with respect to these adverbs, in having them necessarily to the right of the infinitive at S-Structure. This is essentially equivalent to the point made by Pollock (1989, 412).[12]

If some adverbs can be left-adjoined to VP, and others to Infn-P, the question arises whether any can be left-adjoined to TP. If there are adverbs with that property, then we might expect to be able to see that property reflected in Italian, since such adverbs would, by virtue of being left-adjoined to TP, hence higher than the infinitive left-adjoined to T′, appear at S-Structure to the left of the infinitive, unlike those adjoined to Infn-P (or VP). (In French it would be harder to distinguish them from those adjoined to Infn-

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　[10] On the possibility of an abstract T in (English) infinitives, see Stowell (1982) and McCawley (1988, 216).
　It is also possible that at least some infinitives have both abstract T and abstract Agr. If I in (7) were Agr, it would probably have not to be coindexed with PRO, thinking of the fact that inflected infinitives in Portuguese give the impression of not corresponding to true cases of control.
　[11] Pollock's approach was to take French Agr to be transparent to θ-marking even in infinitives.
　[12] And to my 1986 suggestion that he mentions, with the difference (among others) that that earlier idea, like both his formulation and Belletti's (1988), did not contain the proposal about infinitive adjunction to X′.

P, given the reduced scope of infinitive movement.) Some examples of adverbs appearing to the left of Italian infinitives are in fact given in Rizzi (1982, 103).

For the case of an infinitive accompanied by a clitic and by an adverb left-adjoined to TP, the order in Italian will be . . . Adv Inf Cl . . . , with the three elements left-adjoined to TP, T', and T, respectively. If the adverb is of the type that cannot be adjoined to Infn-P or VP, then the order . . . Inf Cl Adv . . . will be excluded. A relevant pair of examples, provided by Guglielmo Cinque, is the following:

(10) senza   forse   invitarlo
      without perhaps to-invite-him

(11) *senza invitarlo forse

On the other hand, with no adverb is it possible to have the order *. . . Inf Adv Cl . . . . This will follow if adverbs can never left-adjoin to T', as opposed to TP.[13]

Partially similar is the case of the Piedmontese negative morpheme *nen*, which obligatorily appears to the left of the infinitive (despite appearing obligatorily to the right of the finite verb).[14] In its positioning with respect to the infinitive and finite verb, Piedmontese *nen* strongly resembles French *pas*, discussed by Pollock (1989), who takes *pas* to be generated between T and Agr (between T and Infn, from the perspective of (8) and (9)). The finite verb in French raises to T, across *pas*, whereas the infinitive raises only as far as Agr, leaving *pas* to its left. This analysis of *pas* does not transpose to Piedmontese in a way compatible with our analysis of verb-clitic order. The problem (which does not arise in French) is that Piedmontese is exactly like Italian (and unlike French) in having the order infinitive-clitic. Thus, one must account for the fact that Piedmontese infinitives cannot move past *nen* even though they can move past the clitic. More specifically, the problem is that if the order *nen*-infinitive is attributed to a (French-like) necessarily short movement of the infinitive (up to Infn, from the present perspective), then there is no way to account for the position of the clitic, and in particular for the Piedmontese-French contrast with respect to clitic order.

I am led to propose, then, that *nen* is higher up (farther to the left) than Pollock suggested for *pas*:

(12) *Piedmontese*
      . . . *nen* . . . V + Infn . . . Cl + T . . . [$_{Infn}$ e] . . . [$_{VP}$[$_V$ e] . . .

Here, V has moved through Infn and then adjoined to T' as before, but *nen* is to the left of T rather than between T and Infn. Taking *nen* to be adjoined to the left of TP,

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[13] This prohibition could not be formulated under my (1990) approach in which the infinitive itself adjoined to TP. The prohibition in question might derive from the XP status of adverbs, combined with a restriction against adjoining XP to Y'; alternatively, the adjunction of XP to Y' might be possible, but it might yield a node nondistinct from YP, to which a Z^0 like an infinitive could not adjoin. For relevant discussion, see Rizzi and Roberts (1989).

[14] Unlike Italian *non*, which obligatorily precedes both infinitives and finite verbs, and which I take to be itself an X^0 element, as in Kayne (1989a, 243), rather than an adjoined adverb-like element. (On Piedmontese negation, see Zanuttini (1987; 1990).)

we have a consistent structure.[15] Since the infinitive adjoins to T', it must follow *nen*, as in the discussion of (10).

The similarity between *nen* and *pas* is emphasized by the fact that in auxiliary–past participle sentences the preferred position for *nen*, like that of *pas*, is to the left of the infinitival auxiliary (Luigi Burzio (personal communication)). One is led to wonder, then, whether *pas* should not also be considered to be adjoined to the left of TP, rather than below T, as Pollock has it. This would raise the question of how exactly to allow for the order infinitive-*pas* where the infinitive is an auxiliary (a question that arises in any event for Piedmontese), and it would presumably require postulating the presence of another functional head node above T into which (only) the auxiliary could move. Somewhat similarly, if it is the case that *pas/nen* are left-adjoined to TP in finite clauses, too, there would have to be a higher X^0 for the finite verb to move into, presumably the Agr of Chomsky (1991) and Belletti (1988).

Summing up, I have claimed that infinitives in Italian left-adjoin to T', that clitics in Italian infinitival clauses left-adjoin to T, that infinitives in French move up only to Infn, and that clitics in French infinitival clauses left-adjoin to Infn. In addition, I have taken Piedmontese infinitives and associated clitics to behave as in Italian, despite certain differences with respect to negation.[16]

In the languages discussed so far, infinitive adjunction to T' is paired with clitic adjunction to T, and infinitive movement to Infn is paired with clitic adjunction to Infn. Given the constraint assumed earlier against clitic adjunction to trace, it is not possible to combine clitic adjunction to Infn with infinitive adjunction to T', since the latter presupposes infinitive movement through Infn (to pick up the infinitival suffix). However, there is no reason why in some language clitic adjunction to T could not be paired with infinitive movement to Infn.[17] This, I would argue, is precisely the case in Occitan, in earlier French, and to some extent still in literary French. For example, in literary French (but not in colloquial French) it is possible for the clitics *y* and *en* to be separated from the following infinitive by certain adverbs:

(13)　. . . en　bien parler . . .
　　　　 of-it well to-speak

We can take this possibility to correspond to (14),[18]

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[15] Alternatively, *nen* could be in Spec of NegP, as Pollock (1989, 414) suggests for *pas*, but only if NegP is higher than TP, contrary to what he assumes.

[16] Beyond the scope of this article is the question of how best to express the fact that clitic climbing (into a matrix sentence) is, in the case of finite matrix verbs (see Parry (1989)), marginal in Piedmontese as compared with Italian, though available to a greater degree than in French.

[17] In using the word *movement* rather than the more explicit *adjunction*, I am leaving open the possibility that V-to-Infn might be substitution in the sense of Rizzi and Roberts (1989).

[18] Where Adv is adjoined to Infn-P. Note that these intervening adverbs/quantifiers can be phrasal, as for example in the literary French (i) and (ii) (see de Kok (1985, 339, 346)), supporting the idea of adjunction to a maximal projection.

(14)   . . . Cl + T . . . Adv . . . V + Infn . . . [$_{VP}$[$_V$ e] . . .

in which V has raised to Infn and Cl has moved across Adv to T.[19]

Another configuration that comes to mind would be one in which V moved up through Infn, but instead of adjoining to T', moved into T itself. As before, this would preclude the Cl from adjoining to Infn, since Infn would be a trace, but would be compatible with Cl adjoining to T:

(15)   *Sardinian*
    . . . Cl + [[V + Infn] T] . . . [$_{Infn}$ e] . . . [$_{VP}$[$_V$ e] . . .

This arguably corresponds to the situation in Sardinian, which has the order clitic-infinitive, apparently like French and Occitan, but in fact differs from them in prohibiting in most contexts the order adverb-infinitive where the adverb is of the type that can precede the infinitive in French and Occitan, but not in Italian.[20] Having the infinitive move into T accounts directly for the position of the clitic, since under my analysis, a verb can be followed by its clitic only if the verb is adjoined to some X'. The adverb contrast between Sardinian and French/Occitan will follow if the adverbs in question (those corresponding to French *bien* 'well', *mieux* 'better', *mal* 'badly', as well as the leftward-moved quantifiers like French *tous* 'all', *tout* 'everything', *rien* 'nothing'; see Kayne (1975, chap. 1)) can adjoin to Infn-P, but not to TP.[21]

Sardinian does allow these moved quantifiers to precede the infinitive in modal constructions of the sort that show clitic climbing. I suggest that in such sentences the moved quantifier has moved out of the embedded sentence entirely; that is, it is not found anywhere in the representation shown in (15). Instead, we have (16),

(16)   . . . Modal . . . QP . . . [$_{Modal}$ e] . . . [[V + Infn] T] . . .

in which the QP has moved out of the embedded clause past the base position of the

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    (i) n'en   presque rien   dire
        NEG of-it almost   nothing to-say
    (ii) en   fort   bien parler
        of-it strong well to-speak

    The Romanian Cl Adv V construction differs in this respect, in that it does not allow Adv to be visibly phrasal, for reasons that are unclear; partially differing approaches to the Romanian construction can be found in Dobrovie-Sorin (1990), Motapanyane (1989), and Rivero (1988).

    [19] The contrast here between Occitan, etc. and colloquial French may be related to null subject considerations; see Kayne (1989a). The possibility of (i)

    (i) n'en   pas parler
        NEG of-it not to-speak

in literary French might indicate that Cl can move to an X^0 higher than T; see the previous text discussion concerning the order of auxiliary and *pas*. Such an X^0 might also be available to those varieties of Occitan that allow, like Catalan, the order infinitive-*pas*; compare also the dialect of Bergamo, whose *mia* thus appears (Bernini (1987, 115)) to differ minimally from Piedmontese *nen*. Alternatively, it might be that languages can differ with respect to where they attach their (nonhead) negative morpheme.

    [20] All the Sardinian data discussed are due to Michael Jones (personal communication); see, in general, Jones (1988).

    [21] Note also that these adverbs and quantifiers must follow negative *pas*.

modal verb and adjoined probably to the higher VP. Since the modal verb itself will have raised to its T or Agr, the QP will end up between the modal and the embedded infinitive. In this way, we can maintain the account suggested in the preceding paragraph for the fact that in contexts with no higher modal the QP must remain postinfinitival. Such raising of QP past the base position of a higher modal is supported by French examples such as (17),

(17) . . . tout   pouvoir   faire . . .
        everything to-be-able to-do

in which the object of the lower infinitive appears visibly to the left of the higher modal. Of course, the Sardinian example looks more like (18):

(18) Jean peut   tout   faire.
        Jean is-able everything to-do

That Sardinian does not have the word-for-word equivalent of (17) is akin to the fact that French does not have (19):

(19) *Jean tout peut faire.

When the modal itself must move up to T or beyond, as is true of French finite modals and all Sardinian modals, the raised QP will appear to the right of the modal in S-Structure even though the QP is contained in the matrix clause.[22]

  This approach to Sardinian . . . Modal . . . QP . . . Inf . . . will probably turn out to be supported by the very fact that there is no counterpart to these structures in Sardinian with QP replaced by one of the above-mentioned adverbs (taken to modify the infinitive). This asymmetry between QP and Adv can be related, given my proposal, to the fact that there is a corresponding asymmetry in French between QP and these adverbs as far as raising into a higher sentence is concerned, namely, that whereas (17) and similar examples are perfectly common in French, parallel examples with a moved adverb are very difficult to find (although not completely nonexistent).[23]

  Further support may come from a contrast between English and mainland Scandinavian concerning negation. In English, double negation of the following sort is possible:

(20) He says that he has not not done it.

In mainland Scandinavian, this seems to be impossible, as the following Swedish example shows (example from Christer Platzack (personal communication)):

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  [22] From this perspective, French (18) is probably ambiguous between the finite counterpart of (17) and the finite counterpart of . . . *pouvoir tout faire* . . . .
  [23] For example:
(i) J'ai   mal   dû   raccrocher.
      I have badly must to-hang-up
      'I must have hung (the phone) up badly/wrong.'

(21) *Han sæger att   han inte har inte gjort det.
     he   says that he   not has not done it

Without the second *inte*, the sentence would be fine (embedded *inte* precedes the finite verb in mainland Scandinavian). If the second *not* in the English example were contained in the participial clause, we would have to say that for some unclear reason Scandinavian participial clauses differ. My proposal is that neither English nor Scandinavian past participial clauses can contain the negative morpheme, and that the contrast between (20) and (21) should be related to the independently needed contrast between English and mainland Scandinavian concerning auxiliary raising, which takes place in the former, but not in the latter.[24] More precisely, let us take English (20) to have a D-Structure representation of the form . . . *not* . . . *not* . . . *have* . . . , with *have* raising to T or Agr not merely across one *not*, as is generally supposed to be possible, but here across two.[25] If this is the only way of deriving (20), then (21) will be unavailable in mainland Scandinavian simply as a consequence of the fact that those languages lack auxiliary raising. If this is correct, then (20) is like (16) in having an element in a higher clause (the second *not* of (20), the QP of (16)) that at first glance seemed to be in the lower clause (participial in (20), infinitival in (16)).

   In conclusion, then, the Sardinian . . . Modal . . . QP . . . Inf . . . construction seems ultimately to be compatible with the analysis of Sardinian infinitives as moving to T, that is, to a higher functional head than the one French infinitives move to. The extra distance moved by the Sardinian infinitive as compared with the French one is what is responsible for the much more limited availability in the former of infinitives preceded by QP or Adv. Italian is more like Sardinian than like French in this respect, due, I claim, to the fact that Italian infinitives also move up to the T level.[26] At the same time, the difference between Italian infinitive adjunction to T' and Sardinian infinitive movement to T accounts for Italian's having infinitive-clitic order and Sardinian's having the order clitic-infinitive.

   Before leaving infinitives for past participles, let us ask whether the above differ-

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[24] Why auxiliary raising is limited to English, of the two, is unclear. Perhaps there is a link to the extra agreement morphology in English; see Kayne (1989b).

[25] At least some Scandinavian speakers actually accept . . . *att han inte inte har gjort det*.

   The acceptability of *You could have not done it* implies raising of nonfinite *have*; see Pollock (1989, 376) and Johnson (1988).

[26] The fact that Italian generally lacks the . . . Modal . . . QP . . . Inf . . . construction (where QP is associated with a (nonheavy) infinitive) that Sardinian has is not yet accounted for.

   On the other hand, Belletti (1990) has argued that Italian does have some (short) leftward quantifier movement (to a position to the right of the S-Structure position of the verb); see the argument mentioned in Pollock (1989, fn. 7).

   Judging from Ganzoni (1983) and Signorell et al. (1987), there are at least two varieties of Rhaeto-Romance that likewise (appear to) lack this construction. If so, that is notable, since they are like Sardinian in having clitic-infinitive order. It may be that they move the infinitive to T as Sardinian does, yet fail to have any long leftward quantifier movement at all, for reasons that remain to be elucidated.

   Ganzoni (1983, 180) contains an example with a modal infinitive followed by clitic plus embedded infinitive, suggesting that the variety in question lacks Longobardi's (1980) double infinitive filter. If so, it suggests that his filter might come into play only in languages whose infinitives adjoin to T'.

ences in verb movement could possibly be correlated with other properties of these languages. One point to consider is that Occitan, Sardinian, and Italian are all null subject languages, in the core sense of the term; that is, all three are languages that normally fail to express a pronominal subject. If I am correct in taking Occitan to have V-to-Infn movement with the possibility of no additional V-movement, then it follows that having null subjects cannot be a sufficient condition for having systematic V-raising to a position above Infn. On the other hand, it might be the case, in the spirit of Kayne (1989a, 241) and Belletti (1988), that having null subjects is a necessary condition for such long V-raising—in other words, that French infinitives raise no farther than Infn for principled reasons.[27]

The Italian-Sardinian contrast between adjunction to T' and movement to T does not lend itself to any simple null subject approach. However, there may possibly be a link with the so-called free (subject) inversion construction, insofar as Sardinian, according to Jones (to appear), tends to avoid that construction with indefinite NPs that are in an agreement relation with the verb.[28] In addition, Jones (1990) has noted that subject inversion in Sardinian is "inhibited by certain postverbal complements" in the manner of French Stylistic Inversion.[29]

1.2. Past Participles

Clitics occur with past participles in Romance rather little. The order clitic–past participle is attested in Belgium[30] but is absent from standard French. There are two kinds of environments in which one might have expected to find it, one with and one without

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[27] If the text decision to have Cl adjoin in infinitival clauses to T rather than Agr is correct, then the null subject parameter would have to involve T in a way not envisaged by Kayne (1989a). This is not implausible if Rizzi (1986a, 518) (see Rizzi (1982, 130)) is correct in distinguishing a "formal licensing" aspect of the null subject phenomenon, and if formal licensing depends on some property of T.

The implications of my analysis of infinitive-clitic order for Rizzi's (1982, 83ff.) Aux-to-Comp construction are as follows: It is possible to have . . . Aux_{inf} . . . Cl . . . NP . . . V_{PP} . . ., where the NP is the nominative lexical subject of the Aux. Thus, this NP cannot systematically be in standard subject position unless Cl is adjoined to C and Aux to C'. Alternatively, Aux could be adjoined to T' (or conceivably Agr') and Cl to T (or Agr) as in the text, with the NP lower in the structure.

The impossibility of having the lexical NP separate Aux from Cl in the above structure (that is, *. . . Aux . . . NP . . . Cl . . .) seems completely general in Romance when Cl follows V (and contrasts with the possibility of . . . Cl . . . NP . . . V_{fin} . . . in Galician; see Alvarez, Monteagudo, and Regueira (1986, 205), Uriagereka (1988)). It follows from Aux adjoining at the X^1-level, much as in the discussion of footnote 13.

[28] Perhaps agreement with a postverbal indefinite NP somehow involves adjunction of V to X'. Occitan, which is like Sardinian in having clitics precede the infinitive, also seems to have less subject inversion than Italian (and less than Sardinian), despite being a null subject language in the core sense (see, for example, Doniol (1877, 40, 52)).

The fact that Sardinian (but not Occitan) gerunds precede their associated clitics, however, suggests that Sardinian does not systematically refuse V-adjunction to X'. Occitan appears to have some form of leftward verb movement in interrogatives and imperatives, as Sauzet (1989, n. 11) suggests.

Consideration of Gascon is beyond the scope of this article.

[29] Despite Sardinian's not requiring a trigger in the French manner. For the relevant French details, see Kayne (1972; 1980b, sec. 2).

[30] See Grevisse (1964, sec. 477) and Remacle (1952, 228n, 265; 1956, 131). Also see Mattoso Camara (1972, 226) on Brazilian Portuguese and Signorell et al. (1987, 90) for a Rhaeto-Romance dialect.

a preceding auxiliary. In French, when there is an auxiliary, the clitic adjoins to the left of that auxiliary:

(22)   Marie nous a   parlé.
       Marie us$_{DAT}$ has spoken
(23) *Marie a nous parlé.

This might be related in part to the sometimes obligatory raising of clitics to the causative verb in complex causative constructions (see Kayne (1975, chaps. 4 and 6; 1984, chap. 2, fn. 31), Rouveret and Vergnaud (1980), Burzio (1986)).

(24)   Jean nous fait   photographier par Paul.
       Jean us   makes to-photograph by Paul
       'Jean has us photographed by Paul.'
(25) *Jean fait nous photographier par Paul.

But that would not cover (26), in which there is no auxiliary:

(26) *tout individu nous   présenté
      any person   us$_{DAT}$ introduced

Here the participial relative clause provides no well-formed means of using a dative clitic, in standard French. Examples comparable to (26) are given by Grevisse (1964, sec. 477) for Belgian French. The order participle-clitic is found in no type of French, as far as I know:

(27) *tout individu présenté-nous

I have no interesting proposal to make concerning (26).

    The absence of (27) from all types of French is plausibly to be derived from the absence of infinitive-clitic order.[31] It also appears to be the case that if a language allows clitic–past participle order, then it allows clitic-infinitive. Of the languages that have infinitive-clitic order, some allow neither participle-clitic nor clitic-participle. Some have participle-clitic order. One is Italian, which allows the equivalent of (27),[32] although with an auxiliary, the clitic must raise:

(28)   ogni   persona presentataci . . .
       every person   introduced-us$_{DAT}$
(29) *Maria ha   parlatoci.
      Maria has spoken-us$_{DAT}$
(30)   Maria ci ha parlato.   (= (22))

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[31] However, the Val d'Aosta dialect of northwestern Italy described by Chenal (1986) has a robust use of past participle–clitic order (at least with a preceding auxiliary), yet is predominantly clitic-infinitive (although infinitive-clitic is not absent; see p. 358).
[32] See Burzio (1986) on small clause relatives.

Italian also allows past participle–clitic order in the so-called absolute construction studied by Belletti (1981; 1989) and Kayne (1989c, sec. 6):

(31) Una volta conosciutami, Gianni . . .
      once   known-me   Gianni

The analysis of verb-clitic order developed so far has the clitic necessarily left-adjoined to an empty (nontrace) functional head position. In (28) and (31) the underlined *a* in *presentataci* and *conosciutami* represents feminine singular agreement (with the head of the relative in (28) and with the accusative object clitic in (31)), so that the clitic following *a* can clearly not be taken to be left-adjoined to this participial Agr. Let us therefore take it to be adjoined to an abstract T, as in (32),

(32) . . . V_{PP} + Agr . . . Cl + T . . . [$_{Agr}$ e] . . . [$_{VP}$[$_V$ e] . . .

in which the past participial V merges with Agr and then left-adjoins to T'.[33]

Although Italian does not allow (29), comparable sentences are possible in the Franco-Provençal dialect described by Chenal (1986, 545):[34]

(33) Dz'i   batia-la tot solet.
      I have built-it all alone

In this example, as in (28) and (31), the underlined *a* of the past participle *batia* corresponds to the past participial Agr, in this case agreeing with the clitic *la*. Let us propose that here too we have the structure given in (32), this time embedded under the auxiliary.[35]

Taking the past participle here to left-adjoin to T' amounts to establishing a strong parallelism between it and the Italian infinitive, which also left-adjoins to T', as argued above. As noted in the discussion following (15), this longer movement of the Italian infinitive, as compared with the French one, correlates with contrasts like the following one:

(34) *Tutto   rifare   sarebbe   difficile.
      everything to-redo would-be difficult

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[33] Whether or not there can be further movement to the C level (see Cinque (1990a, n. 25)) will be left an open question (that recalls the second paragraph of footnote 27).

[34] For some speakers of Italian, whether or not the auxiliary itself is tensed seems to play a role, in that they accept to some degree some sentences like (29) in which the auxiliary is untensed (infinitival or gerundial).

[35] Chenal (1986, 222, 226) also contains examples similar to (33) but without past participle agreement. Furthermore, Piedmontese, which has . . . Aux V_{PP} Cl . . . (see Burzio (1986, 123)), never shows past participle agreement there (although it does in those environments in which the clitic can raise to the auxiliary). In such cases it might be, as I have suggested (Kayne (1990)), that Cl is adjoined to the participial Agr.

Alternatively, the absence of agreement might ultimately have a different interpretation (yet to be discovered). That would permit the claim that abstract participial Agr can never host a clitic. Extended to the similar adjectival Agr (both involve gender but not person) and combined with the idea that abstract T can be associated with past participles, but never with adjectives, this claim would yield the (correct, as far as I know) result that there could never be any . . . Adj-Cl . . . in Romance, since the clitic would have no functional head to adjoin to.

(35) Tout refaire serait difficile.

The quantifier *tout* can move leftward from its base position following the infinitive in French, left-adjoining to Infn-P (the infinitive in French left-adjoins to Infn⁰), but it cannot move up to the T level (in either language), so that the Italian counterpart is not possible.[36] Given the proposed parallelism between Italian infinitives and past participles, then, we would expect the participial equivalent of (34) not to be possible in Italian, although it could well be in French, if the infinitive-participle parallel extends to French. The facts are as expected:

(36) *Gianni ha tutto   rifatto.
       Gianni has everything redone
(37)   Jean a tout refait.

There is, however, an apparent complication. I have taken (33) to indicate that in that Franco-Provençal dialect, the past participle moves as far leftward as it does in Italian, at the very least in such examples with the order participle-clitic. It might therefore seem that leftward quantifier movement across the participle should be impossible in that dialect, too, in particular in participle-clitic sentences. But Chenal (1986, 340) contains the following example:

(38) L'an   tot   portà-lèi   vià.
       they have everything carried-him$_{DAT}$ away
       'They have taken everything away from him.'

The solution that I would like to propose is to take (38) to be the exact counterpart of the Sardinian examples with leftward quantifier movement across an infinitive, referred to in the discussion of (16), and, more precisely, to claim that in (38) *tot* has moved out of the participial clause entirely, past the base position of the auxiliary, probably adjoining to the VP headed by the auxiliary. The surface order will then follow from the fact that the auxiliary itself raises leftward out of its base position up to the finite Agr.[37]

1.3. Split Clitics

Let us return now more specifically to the question of verb-clitic order. I have claimed that participle-clitic order is derived in a way strongly similar to the way in which infinitive-clitic order is derived. In both cases the clitic left-adjoins to a functional head (T), to the single-bar projection of which (T′) the participle/infinitive left-adjoins. This parallelism might at first glance seem to be weakened by an asymmetry that holds between past participles and infinitives with respect to the phenomenon of *split clitics*. I shall argue that although this asymmetry does show that past participle constructions

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[36] Except with a heavy infinitival VP. See footnote 26 and Belletti's (1990) suggestion that in comparable examples with *spesso* 'often' plus past participle only "heavy VP shift" is involved.
[37] The ungrammaticality of (36) must then reflect the lack of long quantifier movement in Italian; recall footnote 26. Whether French (37) involves long movement as in (38) or short movement within the participial clause is now surprisingly difficult to ascertain. (36) improves with a heavy VP, as before.

differ in an important respect from infinitival constructions, it does so in a way that leaves intact the analysis of the preceding section.

By split clitics, I have in mind the case of a verb associated with more than one clitic (two, in all the examples to be considered), such that the two clitics find themselves in distinct S-Structure positions. A known example is that of French infinitival causative constructions involving a reflexive clitic associated with the embedded infinitive. Martinon (1927, 302) gives the following instance:

(39) Voilà ce qui l'en a fait se souvenir.
here-is that which him of-it has made REFL to-remember
'Here's what made him remember it.'

The reflexive clitic remains adjoined to the infinitive, while the clitic *en*, which corresponds to a complement of the infinitive, raises up to the causative verb (for discussion, see Kayne (1975, chap. 6)). Since causative constructions have a number of very particular properties, it may not seem surprising that Italian noncausative infinitive constructions never display split clitics:

(40) Gianni vuole darceli.
Gianni wants to-give-us$_{DAT}$-them
(41) Gianni ce li vuole dare.
(42) *Gianni ci vuole darli.
(43) *Gianni li vuole darci.

In (40) both clitics have adjoined to the lower T; in (41) both have raised up to the matrix verb (which has itself moved into the matrix finite Agr). Neither clitic can raise to the matrix verb alone, while the other remains below (see, for example, Rizzi (1982, 44)).

Against the background of (40)–(43), it is notable, however, that Chenal (1986, 398, 399) gives two examples of split clitics in the Franco-Provençal auxiliary-participle construction:

(44) T'an- të prèdzà- nen?
you$_{DAT}$-have they spoken of-it
(45) T'an- të deut- lo?
you$_{DAT}$-have they said it

In both of these, the dative clitic is raised to the auxiliary, while the other object clitic adjoins to the embedded T (past which the participle moves). Similar examples have been attested for the nearby dialects studied by R. Harris (1969).

We can distinguish (44)–(45) from (42)–(43) as follows: Assume that once a clitic is adjoined to some X^0, it cannot be detached from it. $Cl + X^0$ can subsequently move as a constituent; but Cl cannot move, leaving X^0 behind.[38] If two clitics are adjoined to the

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[38] Recall my earlier assumption that a trace cannot be a proper subpart of an X^0 constituent, following Baker (1985, 89; 1988, 73).

Note that the severe limitations holding of clitic splitting are, from Roberts's (1991, 212) perspective, unexpected.

same X^0, neither can be detached from it, nor, therefore, can they be detached from one another. It must then be the case that in (44)–(45) the dative clitic *t'* has raised up to the auxiliary without passing through the embedded T position to which the lower clitic is adjoined. This allows us to account for the impossibility of (42)–(43) by saying that although a clitic can move from an A-position out of a participial clause directly up to a higher auxiliary, a complement clitic is unable to move from an A-position out of an infinitival clause directly up to a higher verb (*volere* 'want', in (42) and (43)).

The reason for this asymmetry is plausibly that an infinitival complement of a higher verb is necessarily a full CP,[39] whereas the participial complement of a verbal auxiliary is not. Thus, long clitic movement would cross a CP barrier (by inheritance from IP, in the sense of Chomsky (1986a)) in the infinitival case, but in the auxiliary–participle construction there would be no equivalent CP, so that IP (TP) could be L-marked by the auxiliary, yielding no crossed barriers.[40]

The clitic climbing seen in (41) must now clearly not involve long movement of the clitics, since that would cross a CP barrier. Rather, the two clitics must be adjoined to the abstract infinitival T, and that T itself must subsequently move through the C position, evading the CP barrier[41] and carrying the two clitics together with it.

The ungrammaticality of split clitic constructions in Italian with matrix verb and infinitival complement as in (42) and (43) appears to hold for every Romance infinitive-clitic language.[42] It does not, however, hold for every Romance language, since at least some of those clitic-infinitive languages that allow clitic climbing allow split clitics, that is, sentences of the following form:

(46) (*)Jean nous   veut   les   donner.
         Jean us$_{DAT}$ wants them to-give
         'Jean wants to give them to us.'
(47) (*)Jean les veut nous donner.

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[39] Except perhaps in those languages, like Sardinian (see Jones (1988, 337)), that have obligatory clitic climbing out of infinitival complements such as those under discussion. In that kind of language the absence of split clitics could be seen as a subcase of the obligatoriness of clitic climbing in general.

[40] The participial AgrP under T must either be defective (see Pollock (1989, 397)) or else be L-marked by T; recall the first paragraph of footnote 27.

[41] In the manner of successive cyclicity; see Kayne (1989a, 245ff.), going back to a proposal in a different context by Pica (1987).

The Sardinian counterpart of (41) cannot involve movement of Cl + Cl + T to C, since the Sardinian infinitive moves into T itself. Rather, Sardinian (41) must contain an infinitival complement that is a TP (and not a CP) that is L-marked by the matrix V, thereby permitting long movement of both clitics directly into the matrix (recall footnote 39). Alternatively, that infinitival complement could actually be a CP, if the TP just below it were not a barrier in the way it is in Italian (see Kayne (1989a, 246ff.)), so that in Sardinian (but not in Italian) both clitics could move directly into C on their way into the matrix, without landing in any lower I-type node.

[42] The Romanian analytic future and conditional constructions look in part more like the auxiliary-participle construction discussed above than like the infinitival one (although there is neither a participial nor an -*r(e)*-like infinitival suffix on the embedded verb). Either there is no CP, or Dobrovie-Sorin (1989; 1990) is correct in postulating movement of that (bare) V to C, with such movement licensed (from our perspective) either by the absence of suffix or by the special character of the Romanian auxiliary that she brings out.

Examples from seventeenth-century French have been collected by de Kok (1985, 594), and there are also modern dialect examples.[43] Standard modern French does not allow such cases because it does not allow clitic climbing.

The contrast between clitic-infinitive constructions, which can display split clitics, and infinitive-clitic constructions, which cannot, is unexpected under an approach to clitic climbing such as that developed in Rizzi (1982, chap. 1) or Aissen and Perlmutter (1983). Under the present approach, the contrast follows from the different position of the infinitive in the two types of language, combined with the stepwise analysis of clitic climbing proposed in Kayne (1989a). The absence of split clitics in infinitive-clitic constructions was accounted for above. Its existence in clitic-infinitive constructions is licensed as follows: The infinitive moves to Infn^0. One clitic adjoins to Infn^0 and stays there. The other clitic adjoins to T^0 and subsequently moves farther up with T^0.[44] The essential difference is that in these clitic-infinitive constructions, there are two adjunction sites (T^0 and Infn^0) available to the clitics within the infinitival complement, whereas in infinitive-clitic constructions, there is only one (T^0), by virtue of the infinitive's having moved through Infn^0.

1.4. Finite Verbs

The fact that embedded finite verbs do not show the verb-clitic possibility in Romance was discussed earlier, in the text surrounding (6) and (7). Here I briefly mention two exceptions. The first is found in written archaic Italian and seems to be limited to the impersonal clitic *si* (see Fornaciari (1974 (1881), 456)). I have not seen any attestation for a spoken dialect. Conceivably, *si* in this written Italian can be taken to be a true suffix (that is, an X^0 element to which the inflected verb adjoins), reversing the usual relation between clitic and inflected verb/empty functional head.[45]

The second case does come from a spoken dialect, more exactly from certain varieties of Friulian, in which what looks like an embedded finite verb can be followed by a clitic when it is preceded by the impersonal clitic *si*.[46] In Italian this clitic precedes the finite verb, along with other clitics:

[43] See the references cited in Kayne (1989a, n. 34). It needs to be ascertained whether any of the Occitan languages fall into this class.

[44] A language that allows . . . Cl Adv Inf . . . (see (13)) might then allow . . . Cl Adv Cl Inf . . . if Cl + T could fail to move. And in fact I have found two French speakers who accept a sentence of the form shown in (i), with clitics *y* and *en* separated by *plus*:

    (i) ?N'y   plus   en   trouver serait   surprenant.
         NEG there no-longer of-it to-find would-be surprising

    Luigi Rizzi has pointed out to me an interesting prediction made by the text analysis, namely, that in a three-tiered structure, with both clitics complements of the most embedded verb, and the other two verbs of the type of the matrix verb in (46) (taking CP complements), it should not be possible to have . . . Cl_i V Cl_j V V t_i t_j . . . (order of the two traces irrelevant). This prediction has not yet been tested.

[45] Compare perhaps Russian *-sja* and Scandinavian *-s*.

[46] See Benincà (1989). On Italian impersonal *si*, see most recently Cinque (1988).

(48) a.   Si parla.
          SI speaks
     b.   Se ne   parla.
          SI of-it speaks
     c.   Lo si vede.
          him SI sees

In these varieties of Friulian, the clitic instead follows the verb: . . . *si* V Cl . . . . I do
not know why this possibility is found in these dialects and not in others, or not in Italian,
but I will attempt to account for the fact that within the relevant dialects the order finite
verb–clitic seems to depend on the presence of impersonal *si*.

   Burzio (1986, 59) (also see Cinque (1988, 537)) discusses the fact that with Italian
impersonal *si* the tensed verb never shows agreement, even in cases where a participle
does:

(49) Si è   arrivati.
      SI is(3SG.) arrived(PL.)

More exactly, he takes the 3sg. form to be the neutral (default) form of the tensed verb,
so that there is truly no agreement between *è* and *si* in sentences like (49) (for reasons
not directly relevant here). An important question is whether the absence of finite verb
agreement in (48) and (49) corresponds to the absence of any agreement morpheme or
simply to the presence of an agreement morpheme in default form. For past participles,
it is clear that there is a morpheme in default form in Italian. On the other hand, in
J. W. Harris's (1969) analysis of Spanish, the person-number morpheme for 3sg. is taken
to be zero for several tenses. Let us conjecture that a phonological analysis of the relevant
varieties of Friulian will be compatible with taking the 3sg. person-number morpheme
to be zero in all cases of . . . *si* V Cl. . . . If so, that would allow us to claim that in
those cases there is in fact no person-number morpheme at all suffixed to the verb, so
that the representation (50) would be available,

(50)   . . . *si* . . . V + T . . . Cl + Agr . . . $[_T$ e] . . . $[_{VP}[_V$ e] . . .

in which V raises to T followed by the tensed V left-adjoining to the Agr' headed by the
abstract Agr that was not obliged to merge with V by virtue of there being no syntactic
agreement.[47]

   In conclusion, then, the Friulian . . . *si* V Cl . . . construction may provide additional
support for the general approach to (embedded) verb-clitic order that I have adopted,
one in which the clitic left-adjoins to an abstract functional head and the verb to the

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[47] As opposed to the case of 3sg. verbs without *si*. The absence of verb-clitic order there might have to
be attributed to V's having to pass through Agr despite Agr's not corresponding to an overt morpheme. In
essence, a nonovert coindexed Agr would appear to pattern here with overt coindexed Agr (versus the nonovert
noncoindexed Agr of (50)) with respect to V-Agr merger; this would conflict with Kayne (1989b).
   Alternatively, the solution might be that adjunction of V + T to Agr' is possible only when Agr is not
coindexed with the NP in its Spec position.
   As for the position of *si* in (50), Belletti's (1990) proposal that (finite) Agr can be iterated might be relevant.

single-bar projection of that functional head. In section 2 I explore the way in which such verb adjunction impinges, in the case of infinitives, on patterns of control.

2. PRO

2.1. English

There is in English a contrast between *whether* and *if* with respect to control:

(51) He doesn't know whether to go to the movies.
(52) *He doesn't know if to go to the movies.

Both *whether* and *if* are of course possible in the finite counterparts to these:

(53) He doesn't know whether he should go to the movies.
(54) He doesn't know if he should go to the movies.

The grammaticality of (51) can be straightforwardly assimilated to that of other *wh*-infinitive constructions such as (55) if, following Katz and Postal (1964, 96) and Larson (1985, 238), we take *whether* to be a *wh*-phrase:

(55) He doesn't know when to go to the movies.

From this perspective, the *whether* construction of (56) is akin to (57):

(56) Whether they give him a seat or not, he'll be happy.
(57) Wherever they put him, he'll be happy.

The ungrammaticality of (52) leads naturally to the claim that *if* is not a *wh*-phrase, which is supported by the absence of (58):

(58) *If they give him a seat or not, he'll be happy.

Both Katz and Postal and Larson take *whether* to be the *wh*-counterpart of *either* (*neither* being the negative counterpart). This presumably contributes to licensing the combination *whether or not*, as in (59):

(59) He doesn't know whether or not he should go to the movies.

If *if* has no direct relation to *either* and in particular is not a *wh*-phrase counterpart of it, the ungrammaticality of (60) is not surprising:

(60) *He doesn't know if or not he should go to the movies.[48]

Conversely, the *if* of (54) almost certainly bears some relation to that of conditionals:

(61) If you had not left, he would have been a lot happier.

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[48] See Kayne (1972, n. 17) and Emonds (1985, 286n). The construction *if he should . . . or not* is presumably to be thought of as a reduction, in some sense to be made precise, of *if he should . . . or if he should not*.

Since this *if* does not alternate with *wh*-phrases, it is not surprising that *whether*, a *wh*-phrase, is not found:

(62) *Whether you had not left, he would have been happier.

The conclusion I would like to draw from all this is that the primary difference between *whether* and *if* is that the former is a *wh*-phrase and the latter is not, and furthermore, that this difference in syntactic status is responsible for the contrast in behavior with respect to control seen in (51) versus (52).

As for the exact status of *if*, I will, in agreement with Emonds (1985, 287), take it to be a complementizer, and more precisely, to be an X^0 element. Emonds takes *if*, like other complementizers, to be of category P^0, as opposed to Chomsky's (1986a) C^0. I will call it C^0, while keeping in mind that P^0 might perhaps be compatible with what follows, in particular a non-Case-assigning P^0.

The basic proposal will be that control is incompatible with the presence of a lexical complementizer, and hence incompatible with *if*. Control is, on the other hand, compatible with *whether* since *whether* is not a lexical complementizer, but a *wh*-phrase (that is, it is not a C^0, but a phrase in the Specifier position of CP); nor is there any element in (51) that is a C^0. As for the exact reason why a lexical complementizer inhibits control in (52), let us adopt as a first approximation the theory of control developed in Chomsky (1981a) (*LGB*), which takes the controlled subject NP to be the element PRO, having the features [+ anaphoric] and [+ pronominal]. Principles A and B of the binding theory combine to yield the so-called PRO theorem, which states that PRO must be ungoverned. Assume now that a lexically filled C^0 counts as a governor for the PRO in subject position, but that a nonlexical C^0 position does not. (This is straightforward if IP is an inherent barrier, if government of Spec,IP by C^0 depends on L-marking in Chomsky's (1986a) sense, and if a lexically filled C^0 is an L-marker.[49] If IP is not an inherent barrier, then the irrelevance of a nonlexical C^0 should be taken to follow directly from the requirement that for the purposes of binding theory, a governing category can be induced only by a lexical governor (see Chomsky (1986b, 169)).) Then the contrast between (51) and (52) follows from the *LGB* theory of control, via the PRO theorem.

2.2. French

French is substantially like English with respect to the phenomena of the previous section, once we abstract away from a major difference, namely, that French lacks any counterpart to English *whether*. Corresponding to (53) and (54) French has only (63):

(63)   Marie ne sait pas si elle devrait aller au cinéma.

This alone is not sufficient to tell us whether French *si* corresponds more to English *if* or to English *whether*. However, if we run through the various distinguishing properties

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[49] If L-marking is defined as in Chomsky (1986a, 70), then such a C^0 must be taken to θ-mark IP. Concerning the status of IP as an inherent barrier, see Kayne (1989a, 246) and references cited there.

noted above, we see that *si* corresponds strongly to *if* and not at all to *whether*. First, the control counterpart of (63) is ungrammatical, like *if* in (52):

(64) *Marie ne sait pas si aller au cinéma (ou non).

Second, the French counterpart to (56) cannot have *si*, just as English does not use *if* (see (58)):

(65) *Si on lui donne une place ou non, il sera heureux.

(Possible is *Qu'on lui donne . . .* , with the basic complementizer *que*.) Third, the contrast between *whether or not* and **if or not* in (59) versus (60) places *si* with *if*:

(66) *Marie ne sait pas si ou non elle devrait aller au cinéma.

Finally, conditionals in French do use *si* as English uses *if* (see (61)):

(67)　Si vous n'étiez pas parti, il aurait été plus heureux.

The very fact that *si* corresponds to *if* and not to *whether* (plus the fact that no other French word corresponds to *whether* either) can be understood in terms of Katz and Postal's and Larson's idea discussed earlier that *whether* is a *wh*-phrase based on *either*. This is so because French lacks any single word for *either*, too (and similarly for *neither*) (see Kayne (1972, n. 17)).

That *si* is a complementizer (see Huot (1974, 47)) and more specifically a C^0 makes it possible to account for (64) in exactly the same way as proposed earlier for English (52), that is, in terms of the PRO theorem and government of PRO by *si*.[50]

Both *si* and *if* must of course be taken not to be Case assigners (contrary to English *for*) to exclude (68) and (69):

(68) *Marie ne sait pas si Jean aller au cinéma.
(69) *Mary doesn't know if John to go to the movies.

In being non-Case-assigning governors (across IP), *si* and *if* have something in common with adjectives such as English *likely*. With respect to Empty Category Principle (ECP) effects, these C^0s pattern like the usual complementizers *que* and *that*; that is, they do not permit extraction from the subject position just below them. This indicates that government by X^0 is not a sufficient condition for a *wh*-trace to meet the ECP (see Kayne (1983), Chomsky (1986a, 47, 79), and Rizzi (1990)).

The *de* that precedes many French infinitives must now not be an instance of C^0 in, for example, (70). If it were, it would induce a PRO theorem violation parallel to that of (64) and (52):

(70)　Jean essaie de comprendre.
　　　Jean tries　DE to-understand

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[50] Over the years I have found one speaker who accepts (some sentences like) (64). Conceivably, he can allow *si* to occur in Spec of CP (contrary to the general case).

At the same time I would like to maintain my earlier account of the fact that *de* is incompatible with core cases of raising to subject position, with the nearest French counterpart to exceptional Case marking (ECM) constructions, and with a *wh*-phrase in Spec of CP, as well as of the fact that *de* must precede negation (see Kayne (1980a; 1981a)). The arguments given there show clearly that *de* is not configurationally parallel to English *to*, and that it is at the CP level. I would like to propose, then, that it is in Spec of CP. This leaves intact the account given of the four properties just listed, while allowing *de* to cooccur with PRO.

De can now cooccur with PRO because from the Spec position it does not govern PRO. If IP can be an intrinsic barrier,[51] this follows from the fact that there is no lexical C^0 in (70) combined with the fact that it is in general not possible for a Specifier to be an L-marker. (If IP cannot be an intrinsic barrier, then we would have to allow C^1 to inherit barrierhood from IP (and *wh*-phrases to adjoin to IP; see Frampton (1990)).)

Taking *de* to be in Spec of CP (and generalizing that hypothesis to the very similar Italian *di*)[52] has the additional advantage of permitting a straightforward account of the fact that Italian *di* can to some extent be crossed by clitics moving out of the infinitive up into the matrix, whereas Italian *se* (the counterpart to French *si* and a C^0 also, as we shall see) cannot be (see Kayne (1989a, 246)). A further advantage lies in the fact that, although many French and Italian dialects have doubly filled Comps with finite complementizer *que*, I know of none that allow *de* or *di* to cooccur with an immediately preceding (or following) *wh*-phrase. This asymmetry will follow from *que* = C^0 versus *de* = Spec,CP under the standard assumption that *wh*-phrases must occupy Spec of CP themselves (plus the equally standard assumption that a Spec position can host only one phrase).

Finally, note that there is a sharp asymmetry in Italian between *che* 'that' and *di* with respect to the possibility of being preceded by a preposition. Cinque (1990b, sec. 1.7.1) discusses the fact that *che* can in a more formal style be preceded by the preposition *a*:[53]

(71) Sono contrario a che tu   parta subito.
       I-am against   to that you leave right-away

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[51] See (the text to) footnote 49. Another candidate for prepositional specifier is the *de* found in French partitives such as (i),

(i) Jean a   de la viande.
     Jean has of the meat
     'Jean has some meat.'

and similarly for Italian *di*.

My present proposal that *de* is not a C^0 has something in common with Manzini's (1982) proposal that Italian *di* is adjoined to IP, which would have some of the same advantages as mine but not all.

Taking *de/di* to be in Spec of CP does not imply that their effect on extraction is identical to that of *wh*-phrases; see Frampton (1990), Cinque (1990b), and Rizzi (1990).

[52] Note, however, that such a generalization is not forced by control considerations, since even if Italian *di* were a C^0, there would be no PRO theorem violation, just as there is none with the Italian counterpart to *if*; see below.

[53] Left open are the questions of why *di* is not compatible with *che* in Italian and why (71) is ungrammatical in French.

If *di* were a C^0 like *che*, we might expect it to behave the same, but in fact (72) and similar sentences are impossible:

(72) *Sono contrario a di partire   subito.
     I-am against   to DI to-leave right-away

What is possible is (73), without the *di*:

(73) Sono contrario a partire subito.

Cinque argues that although the *a* of (73) looks like a true preposition, it is better analyzed as a complementizer, the simplest reason being that infinitives in Italian can never be preceded by a subcategorized preposition; the only exceptions are with *a* and *di*, precisely those prepositions that independently occur as complementizers. Cinque's argument against taking the *a* of (73) to be a true preposition (that is, a P^0 taking CP as complement) is convincing, but since he takes that *a* to be a C^0, he is unable to bring (71) into the same paradigm (given the presence there of *che* = C^0).

The perspective developed above allows me to make a partially different proposal: The *a* of (73) is not a true preposition, but neither is it a C^0. Rather, it, like French *de* (and Italian *di*) in (70), is a P^0 occupying the Spec of CP position. This immediately accounts for the ungrammaticality of (72) (which would have had two Specs of CP)[54] in a way parallel to my account of (74) (see the discussion two paragraphs back):

(74) *Jean ne sait   pas où   de dormir.
     Jean NEG knows not where DE to-sleep

Furthermore, it allows us to extend Cinque's analysis of these instances of *a* to the *a* of (71) by saying that there, too, the *a* is in Spec of CP. The special stylistic status of (71) then presumably correlates with the fact that it, unlike (73), has a particular sort of doubly filled Comp, that is, a P-filled Spec of CP at the same time as a filled C^0.[55]

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[54] If Italian *se* 'if' is a C^0, as I will argue below, then my proposal correctly accounts for the sharp contrast between (72) and (i), with the latter to be analyzed like (71). (This point was brought to my attention by Raffaella Zanuttini and Maria-Teresa Guasti.)

(i) ?Sto pensando a se partire.
    I-am thinking to if to-leave

Why the example with *se* is marginal compared with (71) remains to be explained.

The contrast between (71) and (72) is repeated with certain prepositions that introduce adjuncts (for example, French *pour que tu partes* 'for that you leave' versus *pour* (**de*) *partir*; similarly for *sans* 'without', *après* 'after'), suggesting that these are also in Spec of CP. (The more nominal *afin* 'in order', *avant* 'before', and others will not be.) Similarly for certain Italian adjunct-introducing prepositions such as *per* 'for' and *senza* 'without'. These differ from *di* in that they, but not *di*, are compatible with the Aux-to-Comp construction mentioned in footnote 27. Perhaps that construction is licensed by Case assignment to Agr, in the spirit of Raposo (1987b), with Agr in C^0 (see Rizzi (1990)) and *di* not an appropriate Case assigner.

Dutch *om* appears to have the same status as French *de*, to judge by Bennis and Hoekstra's (1984, 51) data and partially similar analysis, and Dutch *zonder* 'without' and *na* 'after' appear to have the same status as *sans* and *après*. Why English does not allow the infinitive with these two is unclear (but consider the difference between English and Dutch/German with respect to ECM).

[55] With a potential effect on the extraction facts Cinque discusses.

In conclusion, the syntax of French infinitival *de* appears to be compatible with my proposal to exclude French *si* and English *if* from control structures by using the PRO theorem and the C^0 status of *si* and *if*.[56]

2.3. Italian

There is no single word for *either* (or *neither*) in Italian, and, as we would then expect, no word corresponding to *whether*. There is, on the other hand, a word *se*, which resembles French *si*, and which, like French *si*, has much in common with English *if*. Like *si* and *if*, Italian *se* occurs both in embedded interrogative contexts and in conditionals:

(75) Gianni non sa   se dovrebbe andare al   cinema.
      Gianni NEG knows if he-should to-go to-the movies
(76) Se Gianni avesse fatto questo, Paolo . . .
      if Gianni had   done this   Paolo

Furthermore, it is not used in the construction represented by English (56), just as French *si* is not, as noted in (65). Nor can it occur in a constituent like *whether or not*, and in that respect it again resembles French *si* in (66), as well as English *if*. There thus appears to be every reason to take Italian *se* to be an instance of C^0.

Support for this position comes from dialects like those described by Ganzoni (1983, 160) and Poletto (1990) in which subordinating conjunctions, as well as embedded *wh*-phrases, are invariably followed by the complementizer *cha/che* 'that', with one exception: *scha/se* 'if'. I interpret this to reflect the C^0 status of *scha/se* versus the non-C^0 status of subordinating conjunctions and *wh*-phrases.[57]

Additional support for this hypothesis comes from clitic-climbing considerations. As noted in Kayne (1989a, 245), *se* blocks clitic climbing into a matrix sentence more

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[56] English does allow *John got up as if to leave*. This might involve a reduction of some sort from . . . *as if he were to leave*. There is in addition evidence, shown by the contrast between (i) and (ii), that *as if* is a constituent,

(i)   . . . as if, in my opinion, to leave.
(ii) *. . . as, in my opinion, if to leave.

so that *if* here is arguably not a C^0 (essential, if this is really a control structure).
   Similarly, in the French construction *bien que sachant* . . . 'although knowing . . .', *bien que* must be a constituent not equal to C^0 (see Kayne (1976, (text to) n. 42)). This is supported by (iii),

(iii) *bien qu' ayant . . . et   que sachant . . .
       although having   and that knowing

in which the second *que*, being bare, must be a C^0 and hence induce a PRO theorem violation (if the verbs are finite, this kind of construction is fine).
   Rigau (1984) notes that the Catalan equivalent of *si/if* creates a series of island effects not created by (the Catalan equivalent of) *que/that*, and she suggests that it be considered a modality operator. We can adopt her proposal in the following form: *si/if*, and so on, are necessarily accompanied by an abstract operator in Spec of CP. This will fit with the fact that no overt element occurs there, neither a *wh*-phrase nor (modulo the perhaps related marginality of the first paragraph of footnote 54) a preposition.
   [57] Together with the noniterability of CP. Note in this regard the occasional Germanic construction apparently containing three elements at the C-level; see Reinholz (1989), Koster (1987, 207), and perhaps Klima (1964, n. 5) on earlier English.

strongly than *wh*-phrases do in general. This asymmetry, which is the opposite of what is often found with respect to extractions of other phrases, can be accounted for by taking *se* to be a C^0 (and *wh*-phrases not to be), and by forcing clitic climbing to use C^0 as an escape hatch. A somewhat similar and at least as surprising asymmetry is found in the Italian counterpart to the *easy to please* construction, which is in general much more constrained than it is in English. In particular, the Italian equivalents of sentences like (77) are usually ungrammatical:

(77) This book is hard to convince people to read.

For the empty category bound by the matrix subject to be able to appear in an embedded sentence, the verb below the adjective must be of the type that allows clitic climbing. My proposal (pp. 251, 257) was that Italian (and French) *easy to please* involved an abstract equivalent of clitic movement. Relevant to the present discussion is the fact that an intervening *se* seems to block this construction more strongly than an intervening *wh*-phrase:

(78) ??Questi libri   sono difficili da sapere   dove   mettere.
      these   books are   hard   DA to-know where to-put
(79) *Questi libri   sono difficili da sapere   se rileggere.
      these   books are   hard   DA to-know if to-reread

Again, we can take the asymmetry to follow from the blocking of (abstract) clitic movement by *se* = C^0.

Despite these many ways in which Italian *se* seems definitely to be a C^0 like French *si* and English *if*, there is one major unexpected disparity in behavior. Unlike *si* and *if*, Italian *se* is compatible with control:

(80) Gianni non sa   se andare al   cinema.
      Gianni NEG knows if to-go   to-the movies

In light of the first three paragraphs of this section, it would be totally implausible to try to interpret *se* as an Italian equivalent of *whether*. But if so, the contrast between (80) and its French counterpart (64), repeated here as (81), seems mysterious:

(81) *Marie ne sait pas si aller au cinéma.

The analysis developed here so far would lead us to expect (80) to be ungrammatical, too—*se*, being a C^0, should govern PRO across IP and thereby induce a PRO theorem violation.

2.4. Romance

In the spirit of the comparative syntax work of the past ten or more years, we must ask whether this Italian-French difference is related to any other, in the hope that if a correlation is discovered, it will point the way toward a solution to the problem. In Kayne

(1989a, 252) I suggested a correlation with the null subject parameter, but consideration of additional Romance languages seems to indicate that that was incorrect.[58]

Though it is true that the null subject languages Catalan[59] and Spanish appear to pattern with Italian as far as (80) versus (81) is concerned, the null subject languages Occitan and Sardinian pattern instead with French; that is, they do not allow control with their counterpart to *if* (*se* in Occitan (82), *si* in Sardinian (83)):[60]

(82) *Sabi   pas se anar al   cinema.
     I-know not if to-go to-the movies
(83) *No'isco   si andare.
     NEG I-know if to-go

I conclude that being a null subject language is not a sufficient condition for permitting control with *if* and therefore that there must be some other factor at issue in the Italian/ French contrast between (80) and (81).

The question, then, is to figure out what Italian, Catalan, and Spanish have in common that sets them off from French, Occitan, and Sardinian. I propose that the key property is that of infinitive-clitic order, which holds for the first three, but not for the last three, which show clitic-infinitive order.[61] Before going on to ask why control with *if* correlates with infinitive-clitic order, I will briefly mention some further Romance languages.

The languages/dialects of northern Italy are what might informally be called partial null subject languages, in that they typically allow a pronominal subject to fail to appear at all in some cases, but not in the systematic way found in Italian (see Renzi and Vanelli (1983)). In most of these languages, a pronominal subject, when required to appear overtly, appears as a pronominal clitic.[62] Within this set of languages, I have information

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[58] Skepticism about the null subject correlation had been expressed by Borer (1989, n. 5) for a different reason.

[59] See the example in Rigau (1984, 251) cited in Kayne (1989a, 252).

[60] I am grateful for the Occitan data to Patrick Sauzet, and for the Sardinian data to Michael Jones.

[61] This holds of the dialects of Sardinia other than those in the northern areas of Gallura and Sassari (see Jones (1988, 314) and Loi Corvetto (1982, 136)), which, like much of Gascon, show infinitive-clitic order. My analysis predicts that these infinitive-clitic languages should allow control with their equivalent of *if*; that is, they should differ minimally in this respect from their clitic-infinitive neighbors.

A complicating consideration is that some of these resemble Galician and European Portuguese in allowing both embedded clitic-infinitive and embedded infinitive-clitic order, depending on various factors. The prediction made with respect to such mixed languages is probably (since in all likelihood they have the type of leftward infinitive movement that will turn out to license control with *if* in Italian, Catalan, and Spanish) that they should allow it, too. According to Juan Uriagereka and Carlos Otero (personal communications), this is correct for Galician. In European Portuguese, control with *se* seems to be marginally acceptable, at least in contexts like (i):

(i) Não sei   se ir   o não ir.
     NEG I-know if to-go or NEG to-go

(Brazilian Portuguese primarily has the order clitic-infinitive (see Parkinson (1988, 159), but note Renzi (1989, 365)); the few speakers I have asked do not accept control with *if*.)

[62] The status of these subject clitics is not entirely clear. They are taken to be an instance of Agr by Brandi and Cordin (1989) and by Rizzi (1986b). They differ from Agr, however, in being obligatorily absent even from plural imperatives, much as French subject clitics are; one approach to French versus northern Italian subject clitics that distinguishes them less sharply than the Agr approach is given in Kayne (1983b).

concerning control with *if* in four. In Piedmontese, Milanese, and Paduan such control is possible,[63] as in Italian. In Gardenese it appears not to be.[64] Piedmontese, Milanese, and Paduan are infinitive-clitic languages, like Italian. Gardenese is a clitic-infinitive language.

In the remainder of this article I shall attempt to explain why control with the equivalent of *if* is possible in Romance only in infinitive-clitic languages.[65]

2.5. Infinitive Adjunction Interferes with C^0-Government

In section 1 I took infinitive-clitic languages to differ from clitic-infinitive languages in having their infinitive left-adjoin to the I′ just below the C projection, the clitic itself being left-adjoined to the corresponding I (which I took to be T):

(84)   . . . $V_{inf}+[_{I'} . . . Cl+I . . .$

The order clitic-infinitive in the other class of languages involved no such adjunction to I′, but rather movement of the infinitive into some I position and adjunction of the clitic either to that I position or to some higher one.

Recall now that I have suggested interpreting the ungrammaticality of control with *if/si/se* in French, Sardinian, Occitan, Gardenese (and English) as due to the government of PRO by the lexical C^0 and to the consequent violation of the PRO theorem:

(85)   . . . *if* . . . $[_{IP} PRO . . .$

In clitic-infinitive languages, the infinitive ends up in an I position below PRO. In the absence of *if*, control is perfectly possible and the standard conclusion is that the infinitive there does not govern PRO. In the presence of *if*, the infinitive moves to the same I and the same conclusion holds. In other words, in (86) PRO is governed by *si/se* and is not governed by the infinitive (independently of whether any clitic is present):

(86)   . . . *si* . . . $[_{IP} PRO . . . V_{inf}+I . . .$

By virtue of being governed by C^0, PRO in (86) violates the PRO theorem, that is, the conjunction of Principles A and B of the *LGB* binding theory.

Fleshing out (84) to show PRO and to show where the lexical C^0 is (when it is present), we have (87):

(87)   . . . *se* . . . $[_{IP} PRO . . . [_{I'} V_{inf}+[_{I'} . . . (Cl+)I . . .$

I have taken the infinitive to left-adjoin to I′ in these languages, whether or not a clitic is present. Put another way, in the infinitive-clitic languages like Italian, the infinitive

will in the general case move into a position that is hierarchically closer to PRO than the position it moves into in the clitic-infinitive languages. I would like to propose, now, that in so doing the infinitive in (87) blocks off government of PRO by C^0 and thereby eliminates the potential PRO theorem violation induced by that C^0.

The precise mechanism involved will probably be Minimality, in the sense of Chomsky (1986a, 10). I take c-command to be sensitive to the distinction between nodes and segments of nodes (see May (1985, 63)), so that being dominated by one segment of I' in (87) does not prevent the adjoined infinitive from c-commanding and hence governing PRO (whereas the infinitive in (86) does not govern PRO, as above).[66]

The question now is whether in (87) *se* governs PRO. Since V_{inf} is a closer governor,[67] it would seem that *se* should not govern PRO. However, the definition of Minimality barrier given in Chomsky (1986a, 42) requires that the Minimality barrier be a projection of the relevant closer governor, which is not the case in (87), given standard assumptions about adjoined structures. Thus, we must revise the characterization of Minimality barrier to allow for the case in which the Minimality barrier (here, IP) is not a projection of that governor, but only contains it.[68]

Summing up, the idea that I am pursuing is that a lexical C^0 will be expected to induce a PRO theorem violation when PRO is the subject of the IP sister of that C^0. However, the government relation between C^0 and PRO that would be the cause of such a violation can be blocked by the presence of a closer governor. In languages that have the order infinitive-clitic, and only in those, the infinitive itself can be the required closer governor, having moved into an appropriate position by adjoining to I'.

It should be noted that this account of the correlation between control with a lexical C^0 and infinitive-clitic order, insofar as it depends crucially on the sensitivity of PRO to government by that C^0, supports the very postulation of a category PRO, that is, of a type of empty NP with a particular position in the syntactic structure and with the features [+anaphoric] and [+pronominal] given it by the *LGB* binding theory.

In effect, we can think of the process of looking at a set of Romance languages, moving from one with clitic-infinitive order to the opposite type and back, as a kind of experiment in which we hold the basic structure of a language—Romance—(relatively) constant,[69] while varying the position of the infinitive. What we learn is that as we so vary its position, the grammaticality of control sentences with *si/se* varies in step. If my theoretical proposal is correct, then we can interpret this covariance as reflecting the sensitivity of PRO to the position of the infinitive, that is, to the presence versus absence of a government relation with *si/se*.

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[66] Presumably because I' there (all of whose segments dominate the infinitive) blocks c-command. There may well be an asymmetry here between functional and lexical categories (see Fukui (1989)).

[67] *Se* asymmetrically c-commands the infinitive (see Chomsky (1981b, 134) and Rizzi (1990, 7)).

[68] Alternatively, it could be that the notion "closer governor" is sufficient.

[69] It is for this reason that it is advantageous to work with a set of closely related languages, much as in any experiment one tries to keep the number of variables as low as possible. In the future it should become possible to do the same with a set of (closely related) sets of closely related languages.

2.6. Binding Theory and PRO

The question arises why the infinitive adjoined to I' in the Italian-type languages does not itself induce a PRO theorem violation. There are two kinds of possible answer. One might take the position that the blocking effect of the adjoined infinitive does not actually depend on its governing PRO at all. For example, it might be feasible to allow some category X to create a Minimality block with respect to Y without X governing Y itself, as in Reuland (1983, 117, 122). I shall, however, pursue a different approach (still compatible with the basic idea that infinitive movement in the Italian-type languages blocks the potentially offending government from lexical C^0), in part because I do not see precisely how to formulate the preceding approach satisfactorily (for example, Reuland's specific proposal would not carry over to this case), and in part because of a consideration that will become clearer below, having to do with the determination of the antecedent of PRO, which is left open by the *LGB* binding theory.

Let us adopt the paradoxical position that infinitive adjunction in Italian does create a configuration in which the infinitive comes to govern PRO, that the PRO theorem continues to play an important role in UG, and yet that there is no PRO theorem violation here.

Consider the revision of binding theory suggested by Chomsky in *Knowledge of Language* (*KL*) (pp. 170ff.)[70] in which a slight discrepancy is introduced (in terms of BT-compatibility) between the governing category for an anaphor and the governing category for a pronoun. This discrepancy concerns in particular anaphors and pronouns in subject position. It is relevant when the subject position in question is governed by a lexical category that is found inside (rather than outside, as is more usual) the X^{max} of which the anaphor or pronoun is the subject. In that case the governing category of the pronoun would be X^{max}, the smallest category containing both the governor and a subject position.

However, in the case of an anaphor in such an internally governed subject position, the governing category is not X^{max}, but rather the next category up containing a subject position, the reason being that although X^{max} contains the governor of the anaphor, its subject position is not a potential binder for the anaphor (informally put, it would be unreasonable to require an anaphor to be bound within a category containing no position that could contain a potential binder—comparable unreasonableness is not an issue in the case of pronouns).

It follows from the simplest interpretation of this revision that the PRO theorem should no longer hold in full generality, although it will continue to hold over a restricted (but still wide) range.[71] This is so since the PRO theorem follows from the strict parallelism between Principles A and B of the binding theory. To the extent that strict

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[70] Based on work by Huang (1983).

[71] This point was made very clearly by Battistella (1985) in his discussion of Chinese finite clauses, to which my proposal for Italian infinitives is quite close. He takes the position, as I have so far, that although some PROs are internally governed, in the sense at issue, many remain ungoverned. I will abandon this position below, when I propose that no PRO is ungoverned at all levels of representation.

parallelism fails to hold over some range of environments, the PRO theorem will fail to hold over that range. More specifically, it will fail to hold for any subject PRO governed by a lexical category found within the category of which PRO is the subject, since in such a case the governing category for PRO qua anaphor will not be identical to the governing category for PRO qua pronoun.

On the other hand, the PRO theorem will continue to hold, as in *LGB*, for all object PROs[72] as well as for all subject PROs governed by an element outside the category of which PRO is the subject.

In particular, when a lexical complementizer governs PRO, a PRO theorem violation continues to hold, since the complementizer is outside the IP of which PRO is in subject/ Spec position. This is what excludes . . *if PRO to go to the movies* and the comparable examples discussed above for French, Occitan, Sardinian, and Gardenese (see (81)– (83)).

The difference between the *KL* binding theory and the *LGB* binding theory becomes important when we turn to the languages like Italian in which the infinitive left-adjoins to I':

(88)   . . . *se* . . . [$_{IP}$ PRO . . . [$_{I'}$ V$_{inf}$+[$_{I'}$ . . .

By hypothesis, *se* no longer governs PRO in this configuration, but V$_{inf}$ does. In the *LGB* theory, this would have led to a PRO theorem violation. In the *KL* theory, on the other hand, that is not the case, as follows: The governing category for PRO qua pronoun is IP, since that is the smallest category that contains a subject position and contains the governor of the pronoun.[73]

This is not yet different from the *LGB* state of affairs. The crucial difference lies in how the two theories determine the governing category of PRO qua anaphor in (88). For the *LGB* theory, it is again IP, the same as for PRO qua pronoun, leading to a typical PRO theorem violation. For the *KL* theory, that is not the case. IP in (88) does contain the governor, but it does not contain a suitably accessible potential binder and so does not qualify as governing category for PRO qua anaphor. Rather, the governing category for PRO qua anaphor will be the next category up containing a subject position, in effect, the next IP up (not shown in (88)). Since this governing category is distinct from that assigned to PRO qua pronoun, there is no violation of the PRO theorem sort, as desired.

Thus, the *KL* binding theory[74] is capable of distinguishing the Italian construction represented by (88) from the corresponding French and English one.[75]

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[72] Assuming that for every object position there is an associated subject position within the minimal complete functional complex to serve as potential antecedent. Otherwise, **John likes pictures (of) PRO* would incorrectly be permitted, as Hestvik (1990b, 133) notes. Similarly, there must be no possibility of preposing V'.

[73] This was somewhat less straightforward under my (1990) approach involving infinitive adjunction to IP.

[74] As extended to PRO in the way I have proposed; such an extension was not actually considered in *KL* (see p. 183 there), as far as I can tell.

[75] It does not, however, provide an account of the contrast, within Italian, between *se* 'if' and *che* 'that'. Unlike *se*, *che* is normally incompatible with control, as in (i):

In assigning to PRO qua anaphor the next IP up as governing category, the binding theory adopted here excludes the possibility that the antecedent of PRO in (88) could be taken to be a subject NP two IPs up. This accounts correctly for the fact that in (89) the antecedent of PRO must be *Gianni* and cannot be *Maria*:

(89)   Maria pensa che Gianni non sappia se andare al   cinema.
         Maria thinks that Gianni NEG knows if to-go   to-the movies

This pattern is of course widespread for control infinitivals that are verb complements, as, for example, in (90), in which again the antecedent of PRO must be the subject of 'decide' and cannot be that of 'thinks'.

(90)   Maria pensa che Gianni abbia deciso   di andare.
         Maria thinks that Gianni has   decided DI to-go

This resolves a paradox noted by Lasnik (1989), namely, that the *LGB* binding theory accounts for the distribution of PRO (by excluding it from governed positions), but at the same time fails to assign it a governing category and so makes no claim at all about the location of its antecedent. My extension of the *KL* binding theory to PRO retains the distributional account (by excluding PRO from all governed positions except those subject positions governed by an element inside the XP of which PRO is the subject) and at the same time does assign PRO a governing category[76] and so does make some claim about the location of the antecedent.

This approach to PRO, in having binding theory determine a governing category for PRO and hence delimit the possible positions for the antecedent of PRO, is significantly similar to that of Manzini (1983), but has the advantage that there is no need to add to binding theory any notion of domain-governing category. From our perspective, the same effect is achieved in the Italian infinitive cases by the basic characterization of Principle A as picking out as governing category the smallest category containing a

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(i)   Gianni vuole (*che) andare . . .
       Gianni wants (that) to-go

Perhaps the generalization is that *che* requires that its sister IP be tensed/finite (*che* does not occur with noncontrol infinitives either, even in Portuguese), for reasons that are unclear.

The *que* of (ii) and (iii) in Spanish is probably not the complementizer (C^0) *que*, but rather an instance of *que* in Spec of CP (like the *wh*-phrase *que*, in that respect), given the possibility of clitic climbing seen in (ii):

(ii)   Lo tengo que hacer.
        it I-have QUE to-do
(iii) Hay   que hacerlo.
        there-is QUE to-do it

(The impossibility of clitic climbing in (iii) is due to independent factors; see Kayne (1989a, 249).)

The *að* of Icelandic control infinitivals (see Sigurðsson (1989) and references therein) might be in Spec of CP or it might be, if Icelandic leftward infinitive movement were adjunction to I', a C^0. On the other hand, the *att* of Swedish control infinitivals must, since there is no infinitive movement there, be in Spec of CP. This is compatible with Platzack (1986), parallel to my discussion of French *de* in section 2.2.

[76] More exactly, it assigns PRO qua anaphor a governing category that avoids a contradiction with that assigned to PRO qua pronoun. This point was also made by Battistella (1985).

governor and an accessible subject. Since where PRO is the subject of an infinitive, that subject position does not count as accessible, Principle A will look for the next largest category containing one, which, in the case of the infinitive as complement of V, will straightforwardly be the next IP up (and there will be no PRO theorem violation, as discussed).

The approach developed here has the further advantage of allowing an account of the Italian-French contrast with respect to control in the presence of *se/si*, which depends on the *KL* binding theory and in particular on the analysis of PRO as simultaneously anaphoric and pronominal, whereas Manzini took PRO here to be a pure anaphor.[77]

2.7. Levels

My account of the Italian-French contrast with respect to control in the presence of *se/ si* 'if' depended in part on postulating a rule of leftward infinitive adjunction to I' that applies in Italian, but not in French. The left-adjoined infinitive governs PRO in Italian, with the consequences noted in the previous two sections. The absence of comparable infinitive movement in French means that in French the infinitive does not govern PRO—

[77] As did Bouchard (1984) for certain PROs, and similarly Koster (1987), both of whom take PRO to be able to be governed in a range of contexts completely different from those permitted in the text approach (which is much closer to that of *LGB*). As far as I can see, neither of their approaches (nor those of Bresnan (1982), Williams (1987), McCloskey and Sells (1988), Borer (1989), Huang (1989), or Hestvik (1990b)) yields an account of the Italian-French contrast under study. (On the other hand, I have yet to clarify the degree to which similarities between antecedents of PRO and those of pro are significant.)

The text approach to control maintains the *LGB* account of *It seems (to me) to have understood* as a PRO theorem violation (since the governor *seems* is outside the infinitival IP). The grammaticality of the corresponding French and Italian sentences should be related to the grammaticality of the French and Italian equivalents of *I believe to have understood*, in terms of the ability of a certain class of verbs to take an opaque CP complement. For French and Italian 'seem', this must be in addition to the IP possibility suggested by the existence of subject raising.

One might wonder whether leftward adjunction of the infinitive to I' in Italian might not interfere with raising; it is perhaps worthy of note that raising with *seem* in Italian seems literary, and is completely absent (with infinitives (as opposed to small clauses); observation due to Luigi Burzio (personal communication)) in Piedmontese (similarly, it appears, in Paduan); I leave this question open.

Belletti (1990) has shown that in perception verb complements, as in (i),

   (i)   Ho   sentito i   bambini piangere.
        I-have heard   the children to-cry

infinitive movement takes place as elsewhere. Under my (1990) adjunction-to-IP approach, this would have forced me to deny that *i bambini* is in embedded subject position. Under the present adjunction-to-I' approach, this is not necessary (although I am led to claim that Case on *i bambini* must then come from within the embedded IP, as for English in Kayne (1984, 33ff.)). Infinitive adjunction to I' in the presence of a lexical subject seems definitely required for those speakers who accept (ii),

   (ii) ?Ho   lasciato i   bambini mangiare le   mele.
        I-have let   the children to-eat   the apples

yet refuse the corresponding passive, again as in English (p. 35).

The question also arises whether the binding theory approach to PRO tells us anything directly about the difference between subject and object control. Manzini (1983, 423) suggests that it should not, on the basis of cases where the choice between the two types of control is open. Although such cases are numerous, they are not typical (see the detailed study of Rooryck (1987)). It may be that obligatory object control involves a controller that is the subject of a small clause in the sense of Kayne (1981b, sec. 4.2) (also see Larson (1988)), with that small clause the governing category of PRO.

this is precisely what allows a lexical C^0 in French to induce a PRO theorem violation. In the absence of a lexical C^0, as in (91), French PRO is therefore ungoverned:[78]

(91) Jean veut   aller au   cinéma.
      Jean wants to-go to-the movies

This is of course expected within the *LGB* perspective and is perfectly compatible with what I have said so far. This is so, in the sense that I have argued that PRO can be governed under certain very specific conditions, but have in effect left open the possibility that it can also be ungoverned.

A problem arises, however, with respect to the paradox adduced by Lasnik that was mentioned earlier. I argued that his paradox is resolved for Italian by the fact that PRO there is governed by the preposed infinitive, hence gets a governing category, so that binding theory actually does provide an indication of where the antecedent of PRO must be. But if PRO remains ungoverned in French, Lasnik's paradox reappears there. I would like to propose, then, that French is to Italian with respect to leftward infinitive adjunction to I′ as Chinese is to Italian with respect to *wh*-movement,[79] in other words, that French actually does have such infinitive movement, but only at the level of LF.[80]

This leads to the following proposal:

(92)   All controlled PROs are governed at some level of representation.

(92) holds even though the PRO theorem is largely true. This is so in the sense that the PRO theorem continues to hold for all PROs other than those that are in subject position and governed by an internal governor. On the other hand, if I am correct in putting forth (92), then any controlled PRO that is ungoverned at all levels of representation is equally excluded.

I take the reason for the existence of (92) to be that it is via government that PRO qua anaphor receives a governing category. Assuming further that an antecedent for PRO must be within PRO's governing category (that is, that an ungoverned PRO would not be able to be associated with any antecedent at all), (92) follows. In effect, I have reached the conclusion that PRO is less exotic than it was in the *LGB* framework, since

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[78] In French the S-Structure infinitive does not govern PRO if only because it does not even m-command it, if my proposals in (9) and (14) are accurate. Sardinian is more interesting, given (83), if (15) is correct, since there the infinitive is in the head position whose maximal projection PRO is Spec of, yet it must not govern PRO. Presumably head-to-Spec government is possible only via agreement, if then; also see (the text to) footnote 66.

[79] Thinking of Huang's (1982) proposal that Chinese has *wh*-movement at LF.

[80] And similarly for English, although in English it might alternatively be *to* that at LF adjoins to I′ and governs PRO.

If there is PRO in derived nominals (see Stowell (1989) for discussion), then there must be LF adjunction of N to NP, unless PRO is within N^{max} and a lexical category (see (text to) footnote 66) can govern its own subject PRO.

Recalling that the infinitive licensing PRO in Italian skips over the I whose single-bar projection it adjoins to, we might conjecture that a finite verb, which must move through each I position, could not so license PRO even in LF (for example, it may be that the trace of the verb adjoined to I′ must be head-governed (by I) in Rizzi's (1990) sense (also see Frampton (1990)); or there might be a link to footnote 47). This would account for the lack of PRO with finite verbs in languages like English.

PRO is now like other empty categories in being licensed in part via government; at the same time, the present theory maintains the specificity of PRO, and in particular its exclusion from most governed positions (see footnote 77).

(92) is stated in such a way as to allow for the possibility that there exist instances of ungoverned noncontrolled PRO, that is, instances of ungoverned PRO_{arb}. However, PRO_{arb} seems to exist in Italian with infinitives, as, for example, in (93) (also see Manzini (1979)):

(93)   Tu   conosci il   modo migliore per comportarsi   a   tavola.
       you know   the way best   for to-behave-self$_{arb}$ at table

But by my analysis, the infinitive in (93) has moved into a position from which it governs PRO (notice the clitic in (93) following the infinitive and serving as a visible indication of that general movement). Therefore, the PRO_{arb} of (93) cannot be ungoverned, which suggests in turn that (92) should be taken to extend to all instances of PRO—in other words, that PRO_{arb} is really a subcase of controlled PRO, as proposed by Epstein (1984), who argues that many instances of PRO_{arb} should be taken to be controlled by a hidden dative (also see Higginbotham (1989, 324)). The most recalcitrant cases are those of (94) and (95):

(94)   ?John knows how to get oneself elected.
(95)   a.   John knows the best way to get oneself elected.
       b.   John knows the best way of getting oneself elected.

The fact that these seem best when embedded within a larger NP (as suggested by Petrovitz (1990)) might indicate that these instances of PRO_{arb} must, in the spirit of Lebeaux (1984) and Authier (1989), be bound by some null operator sitting in a position provided by the NP.

Returning to the idea that controlled PRO is governed even in French (at LF), let us reconsider two kinds of examples:

(96)   *Jean ne   sait   pas si aller au   cinéma.
        Jean NEG knows not if to-go to-the movies
(97)   Jean veut   aller au   cinéma.
        Jean wants to-go to-the movies

My idea has been that (96) is excluded because the lexical C^0 *si* governs PRO and induces a PRO theorem violation. Yet I am now proposing that in (97) PRO is governed by the infinitive at LF. There is no contradiction, since in (97) government will be of the internal type (that is, the governor is internal to the IP of which PRO is the subject), whereas in (96) it is of the external type (*si* is external to that IP), and in my analysis the (revised) PRO theorem holds for subject PRO only over the domain of external government configurations.

It is important, however, to ensure that LF movement of the infinitive does not have the undesirable consequence of making (96) legitimate, the point being that sub-

sequent to such LF movement PRO in (96) will be governed by the infinitive and will no longer be governed by *si*. I conclude that a PRO theorem–type violation at S-Structure, as in (96), cannot be neutralized at LF. Considering more closely the exact nature of the violation in (96), note that by virtue of being governed by *si*, PRO qua anaphor receives as governing category the matrix IP, which is perfectly reasonable—if (96) were grammatical, that is where we would expect the antecedent to be. The problem with (96) is really that PRO qua pronoun also receives the matrix IP as governing category,[81] yielding the familiar contradiction. If LF movement of the infinitive were able to neutralize such a violation, it would have to be by virtue of changing what counts as the governing category of PRO qua pronoun. Since the violation remains, I conclude that a governing category assigned by Principle B to a given pronominal element must be taken to stick to it.

Put more perspicuously, a given indexing must respect Principle B at all levels.[82] Thus, if PRO in (96) is coindexed with *Jean*, a violation will ensue since Principle B will not have been respected at S-Structure. On the other hand, if I am correct in thinking that PRO cannot be assigned an antecedent without having a governing category, then in (97) PRO has an antecedent only at LF. In other words, Principle A must be met at some level of representation, but does not need to be met at all levels. This asymmetry between Principle A and Principle B recalls the conclusion reached in Belletti and Rizzi (1988, 318).[83]

If we now ask why there should exist such an asymmetry, the following answer suggests itself: Binding principles are properly thought of as applying to a set of levels of representation associated with a given sentence. Principle A has intrinsically existential character (for a given anaphor, there must exist an antecedent within the appropriate syntactic domain). Interpreting this existential character consistently yields: For a given anaphor, there must exist some antecedent at some level (that is, somewhere in the set) within the appropriate syntactic domain. Principle B, on the other hand, has intrinsically universal character (a given pronoun must be free from all antecedents within the appropriate syntactic domain). Interpreting this consistently yields: A given pronoun must be free from all antecedents at all levels (that is, everywhere in the set) within the appropriate syntactic domain.

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[81] Rather than the embedded CP, which is not a complete functional complex in Chomsky's *KL* (p. 169) sense.

[82] Note that in *John wants to be elected*, we can allow Principle B to apply to PRO at D-Structure since *John* will not be in the governing category then assigned.

[83] This asymmetry, and my analysis in general, is predicated on the assumption that there exists a Principle B distinct from Principle A. It is not incompatible with the attempt, pursued most recently and in most detailed fashion by Burzio (1989a,b; to appear), to fully reduce Principle B to a kind of elsewhere case of Principle A. The at least partial independence of Principle B, in addition to being strongly supported by the way in which the (revised) PRO theorem accounts for the facts of control with *if*, and the like, is suggested by the phenomenon of nonintersecting reference (see Chomsky (1981a, 286)) and by assorted cases of noncomplementarity between anaphors and pronouns, as in Huang's (1983) original discussion of English and Chinese. The fact that Scandinavian (similarly, Russian) does show complementarity with possessives may be related to the fact that the anaphor is adjectival and/or to Hestvik's (1990a,b) idea that Norwegian and English pronouns differ in X-bar status; his work also bears on the question, left open here, of the relation to all this of long-distance reflexives.

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