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Control without PRO

Thesis submitted to the University of London
in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

Victoria Janke
Department of Phonetics and Linguistics
University College London
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UMI Number: U592933

UMI U592933

I,   , confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

In this thesis I develop a syntactic representation of control that is PRO-free. I implement a mechanism of theta-role assignment that uses theta-role percolation (Neeleman and Van de Koot (2002)), which enables the apparent subject properties of controlled infinitives to be reinterpreted as properties associated with an external theta-role, rather than a subject. I first analyse Obligatory Control using a decompositional analysis of theta-roles (independently motivated in Samek-Lodovici 2003), according to which theta-roles are divided into two selectional requirements, one that formally licenses arguments and another that regulates interpretation. It is the latter one that regulates Obligatory Control, by being copied to the controller in the super-ordinate clause. The resulting theory makes the same predictions as one based on PRO, yet avoids dependence on this ill-defined element inherited from the GB era. I then offer an account of the case-agreement properties of predicates in Icelandic infinitival clauses; this data shows not only that PRO is unnecessary but that it cannot actually fulfill the task for which it was proposed. An extra-syntactic analysis is developed for Non-Obligatory Control, since this relation is not syntactically constrained in the way that Obligatory Control is. I claim that in non-obligatory control structures the external theta-role is not saturated syntactically. This unassigned role is subject to an LF-interpretative rule that attributes it with a [+human] specification. This rule suffices for cases in which the interpreted subject is understood generically, but in long-distance control structures, this [+human] specification is further supplemented by a discourse rule that links the theta-role to a highly accessible antecedent, as developed in Ariel (1996). An attempt is made to generalise the rules operative in non-obligatory control structures, to the null-objects

in Rizzi (1986), the consequence of which is that no null-element would be projected in these constructions either and the object properties would be reinterpreted in terms of the internal theta-role complex. In the final chapter, I offer an analysis of partial control (Landau 2000). On the basis of the ambiguous properties pervading this relation, which belong to both obligatory- and non-obligatory control, I analyse partial control as obligatory control + non-obligatory control.

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Chapter 1

The PRO Problem

1.1 Introduction

The topic of this thesis is the syntactic representation of control and in particular whether such a representation requires a null-argument to be projected in the subject position of infinitivals. I will focus on examples like (1)a) and b), as well as examples like (2)a) and b).

(1)   a. $Bill_i$ hoped PRO_i to win

          b.   Bill ordered Ben_i PRO_i to dance

(2)   a.   PRO To finish off one sentence in peace would be nice

          b. Ben_i said to Betty that PRO_i to get there on time will be very difficult

At a purely descriptive level, control constructions involve an infinitival clause with an understood subject, which may or may not gain its reference from a structurally represented antecedent. The sentences in (1) are prototypical examples of Obligatory Control. In these cases, the infinitival is the complement of a matrix verb and the understood subject in this infinitival must refer to a designated argument in the super-ordinate clause. This may be the subject, as in (a), or the object, as in (b). The argument that determines the reference of the understood subject is the controller and the understood subject the controllee. In contrast the sentences in (2) are examples of Non-Obligatory Control. In these constructions, the infinitival's inferred subject is

either uncontrolled, in that it has no structurally represented antecedent at all, as in (a), or its controller is arbitrarily far away, as in (b). That the controller can indeed skip more than one argument in examples such as (b) can be made apparent by a simple this-is-the-house-that-Jack-built-type example, wherein the understood subject can be equated with the argument in the super-ordinate clause, in the face of one, as in (3)a), or even two, as in (3)b), intervening arguments:

(3)   a. Ben_1 complained that Betty had said that PRO_1 to get there on time would be very difficult, because he_1 lived only two stops away.

        b. Ben_1 complained that Betty had said that Binty agreed that PRO_1 to get there on time would be very difficult, because he_1 only lived two stops away.

In both control relations, obligatory and non-obligatory control, the understood subject is standardly represented as PRO (see Chomsky (1981), Chomsky and Lasnik (1993), Martin (1996) and Landau (2000)). But a question pervading both of these constructions is whether it is necessary or indeed desirable to utilise PRO. Most analyses do assume PRO at the syntactic level, so before rejecting it prematurely, it is worth reviewing what use it has served.

One use is that of maintaining a uniform analysis of syntactically regulated elements across both finite and infinitival clauses. Locality, for example, is a property of reflexives; they adhere strictly to Principle A, which demands they be bound locally, within their binding domain. But their occurrence in infinitival clauses, as in (4), means that without recourse to a null-subject to retain their locality property, Principle A must be complicated. For the matrix object to be the reflexive's antecedent the whole clause must constitute the binding domain of the reflexive, but

this does not explain why it must be the matrix object, rather than the subject, which is the antecedent.

(4)   a.   [Bill persuaded Ben [to enjoy himself]]

With PRO's inclusion Principle A is upheld, since the binding domain is the infinitival clause, and the accessible subject that binds the reflexive is PRO. In this way, the semantic antecedent can be restricted to the matrix object, since whatever controls PRO is also interpretatively linked to the reflexive, the latter being bound by PRO:

        b.   [Bill persuaded Ben [PRO to enjoy himself]]

A similar argument provides a solution for secondary predicates in infinitivals. The depictive is predicated of whatever controls PRO, again in this case, the matrix object:

(5)   Ben persuaded Bill [PRO to dance naked]

Lastly, use of PRO also avoids a revision of locality that might otherwise be needed to cover floating quantifiers in infinitivals. If they are bound by a controlled PRO within their clause, the obligatory requirement that *all* refer to *the pupils*, and not *the teachers* in (6) is gained for free, since again it is the matrix object which controls PRO:

(6)   The teachers urged the pupils [PRO to all learn their lines]

There is then an advantage in introducing this category, since it keeps existing theories about the behaviour of other syntactic phenomena intact, ridding us of the

need to complicate the principles that govern them. But this comes at a cost. What is PRO? It isn't an A-bar trace, since unlike an A-bar trace, PRO exhibits anaphoric properties, as in (7)a), cannot (arguably) receive case, as illustrated in (b), nor does it reconstruct, as evidenced by (c). If *someone* in (c) could reconstruct, it would reconstruct into the subject position of 'to impress', in which case quantifier raising of *everyone* should be possible across it. But the sentence is unambiguous indicating that reconstruction into PRO is not an option:

(7) a *Ben_1 said that Bill hoped PRO_1 to win the race

    a') Which book did Ben say that Bill told Betty to buy $t_{which\ book}$

    b) *PRO_{NOM} won the race

    b') Which race did he win $t_{which\ race(Acc)}$

    c) $Someone_1$ left in order PRO_1 to impress everyone

        = There exists a person, such that that person left in order to impress everyone

        ≠ For each person there is someone who left in order to impress them

    c') Which picture of Ben does Bill like t

        = which x, does Bill like [x picture of Ben]

Its anaphoric properties guard against PRO being analysed as small pro, which shows exclusively pronominal behaviour, in needing no overt argument as a referential source at all, as in (8)a), and when pro does have an antecedent, that antecedent need not be local, as in example (b), where pro is bound by an antecedent across a finite clause:

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(8)　　a.　　*pro* vamos a la playa　　　　　　　　　　　　　(Spanish)

　　　　　　　pro go(1pl) to the beach

　　　　　　　'Let's go to the beach'

　　　　b.　　Juan₁ dijo que *pro₁* es muy bajo

　　　　　　　'Juan said that he is(3sg) very short'

But if PRO is an anaphor (see Manzini (1983) and Koster (1987)), it is a very unusual one, since unlike overt anaphors it is usually taken to be restricted to the subject position of infinitivals, as in (9)a) and gerunds, as in (b):

(9)　　a.　　*Bill said that himself to behave will prove rather difficult

　　　　a'.　　PRO to behave himself will prove rather difficult

　　　　b.　　*Bill said that himself talking out loud in the library is forbidden

　　　　b')　　PRO talking to myself out loud in the library is forbidden

It does not behave as an NP-trace either, which forms a chain between a theta- and a case-position, an issue to which I return later:

(10)　　a)　　Bill$_i$ seems t$_i$ to like Ben

　　　　b)　　*Bill tried t$_i$ to like Ben

So PRO, not falling clearly under any category, remains ad hoc. To remedy this, one could continue to develop a theory of PRO itself, trying to reconcile its ambiguous properties within the typology of empty categories. But the alternative pursued here is to do without it altogether. In fact, this aim will become the foremost desideratum for the theory of control to be developed within:

(11) I Our theory of control should not rely on an ad hoc category such as PRO

Meeting the first of our desiderata should not, however, cause us to lose an account for the subject properties of controlled infinitivals, which we saw in examples (4), (5) and (6). The second of our desiderata can therefore be stated as below:

(12) II Our theory should account for the subject properties of the infinitival

Dispensing with PRO is not a unique innovation of this particular thesis, in fact there is a steady line of analyses that have had this aim in mind (see Bresnan 1978, 1982 and Brame 1977 and Evers 1988). The reduction of obligatory control to another syntactic relation also follows a familiar trend (see Williams 1980, in which control is reduced to predication, Manzini 1983, where control is reduced to binding, Hornstein 2000, in which it is analysed as movement and Landau 2000, which adopts an agreement-based approach).[1] However, as will become clear in the next section, the properties of obligatory control do not reflect any one of these relations in particular, rather it is the case that all syntactically regulated relations exhibit a set of shared properties, so in the main they provide general fuel for a syntactic account of control, rather then a particular direction within the syntax.

The organisation of this chapter is as follows. Section 1.2 lays out the key properties of control, starting with Obligatory Control and going on to look at the sub-categories within this relation, namely the Exhaustive and Partial Control of Landau (2000). I then outline the way in which the properties of Non-Obligatory Control differ from the syntactically regulated relation of obligatory control. In this same section, I illustrate why it is important to keep non-obligatory and obligatory control separate; a

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[1] For an early semantic/categorial account, which derives the interpretation of obligatory control constructions from the arguments of the higher predicate, see especially Bach (1979).

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brief look at Bhatt and Izvorski (1998) will demonstrate what is lost if we obscure the line between these two, rather different, relations. The section ends with a review of two conditions for obligatory control retained in this thesis, yet rejected in Landau (2000), namely c-command and split antecedents. A closer inspection of the examples used to dismiss these conditions will lead us to reinstate them to their original place as core criteria to which obligatory control must adhere. In section 1.3, I examine several theories that have sought to reduce control to other relations, starting with the most recent reduction of Landau (2000) in which control is reduced to Agree. Landau's peculiar instantiation of Agree is examined and questions are raised as to its motivation. And of particular interest for the purposes of the present thesis is the way in which the anaphoric nature of the controlled infinitival clause is represented without any direct contribution from PRO, making the additional attribution of PRO as an anaphor in this work superfluous. Having looked at a reduction which retains PRO, I move on in section 1.3.2, to one that does without it altogether, namely Hornstein (2000) in which control is reduced to Move. It will be argued that reduction in this direction leads to empirical problems that an optimal theory of control should seek to avoid. The modifications to Theta-theory in particular, result in empirical set-backs which weigh heavily against the purported benefits of this enterprise. In section 1.3.3, I turn to a third way of reducing control, namely that of binding. I return to the properties that syntactic dependencies share generally, before singling out two that set binding and control apart from movement. Koster (1987) and Manzini (1983) provide precedents for reduction in this direction and a brief look at Manzini (1983) will demonstrate that the empirical terrain a reduction of control to binding can cover is extensive. The spirit of the present thesis gains much from these earlier binding-based analyses, only it is of a more contemporary bent. In particular notions of government, which stem from the GB era are left behind. There are important differences, however, between the binding of lexical anaphors and the binding relation between the antecedent and the dependent in obligatory control, as illustrated in Lasnik (1992). I will look at some of these concerns with a view to

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demonstrating later that the theory of control developed within expects the differences noted in this work and can avoid the problems raised. In particular, we will see that the differences observed concern the elements themselves, namely lexical anaphors and PRO, rather than the relation between these elements. That an anaphoric relation can be maintained, without recourse to an anaphoric empty category is made clear by the next work I turn to, namely Borer (1989). In this work, the anaphoric relation between the controlled infinitival clause and a designated argument in the super-ordinate clause is established without any contribution from PRO. In its place, Borer (1989) inserts pro as the subject of controlled clauses. The present account will seek to maintain this dislocation between the anaphoric relation and an anaphoric element that Borer (1989) achieves, but will do so without any null element posited at all. The aim of looking at these existing attempts at reduction of control has been to finish with a set of desiderata for the present work. Thus the chapter concludes with section 1.4, by setting out what an optimal theory of control must do: the problems it must avoid, the generalisations it should not lose and the questions it must address.

1.2 Properties of Control

1.2.1 Properties of Obligatory Control

The understood subject of obligatorily controlled clauses requires a theta-marked argument as its antecedent and this antecedent must be local, c-commanding and unique:[2]

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[2] To begin with, for ease of exposition only, I represent the null-argument as PRO.

(13)　a.　　Bill$_i$ tried [PRO$_i$ to organise himself]

　　　b.　　*It$_i$ was tried [PRO$_i$ to organise himself]

　　　c.　　*Bill$_i$ thinks it was tried [PRO$_i$ to organise himself]

　　　d.　　*Bill's$_i$ aunt tried [PRO$_i$ to organise himself]

　　　e.　　*Bill$_i$ asked Ben$_j$ [PRO$_{i\&j}$ to kiss Bobby behind the bike shed]

Example (13)b) shows that an argument bearing no theta-role cannot be an antecedent, whilst (c) demonstrates that the empty subject is subject to a locality constraint. The example in (d) establishes that the empty subject must be c-commanded by its antecedent and (e) shows that it cannot host split antecedents.[3] To this list of constraints, Hornstein (2000) adds the obligatorily sloppy reading of PRO under ellipsis and the forced *de se* interpretation of PRO ((g) to (i) from Hornstein 2000):

　　　f.　　Bill$_i$ wanted PRO$_i$ to escape and Ben did too (=Ben wanted Ben to escape)

　　　g.　　The unfortunate expects that he will get a medal

　　　h.　　The unfortunate expect that getting a medal will be boring

　　　i.　　The unfortunate$_i$ expects [PRO$_i$ to get a medal] (= false under OC)

(F) is self-explanatory, but (g) requires one to imagine the unfortunate as an amnesic war veteran watching himself, without recognising himself, in a medal ceremony on TV. Under these circumstances, although (g) and (h) can be said to represent the unfortunate's beliefs, (i) cannot. But if locality is operative in both of the examples in

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[3] More recently (see Landau 2000), the inclusion of condition (d) and (e) have been rejected as criteria for obligatory control. In the next sub-section, I take issue with this rejection.

(g) and (h), we expect both the obligatory sloppy in (g) and the *de se* reading in (h); allowing us to restrict our attention to the properties in (a – e) in what follows.

In Hornstein (2000), it is claimed as an advantage of the movement-based theory of control that the 'de se' reading can be derived; two theta-roles are assigned to one expression, the semantic repercussions of which are that a compound monadic predicate is formed:

(14)   John λx [x hopes x leave]   (Hornstein 2000, (his 39))

But we will see later that the derivation of the 'de se interpretation' is not a peculiarity of a movement-based analysis of control, which means that these examples do not provide support for the control-as-movement enterprise.

1.2.2 Exhaustive Control versus Partial Control

The obligatory control category has recently been revised in Landau (2000), which provides data showing that there are instances of obligatory control which conform to core obligatory control properties, but depart from them in one respect, in that a strict identity between the matrix controller and the controllee is not required. In cases of partial control, the reference of PRO need only include the controller but need not be exhausted by it; it could also include additional individuals:[4]

(15)   a. Ben_1 managed [PRO_1 to eat all the pies]   Exhaustive Control

        b.   *Ben_1 managed [PRO_{1+} to eat all the pies]

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[4] The speakers of English that I have asked either find partial control very marked or completely out (myself included). We will return to this issue in chapter five. But see Landau (2001) for extensive evidence of this phenomenon being productive cross-linguistically.

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(16) a.   Ben$_1$ refused [PRO$_{1+}$ to meet at 6]   Partial Control

      b.   *Ben$_1$refused [PRO$_{arb}$ to meet at 6]

This phenomenon, first noted in Williams (1980), is found in control cases which have a collective predicate in the embedded clause. Importantly, if these predicates are syntactically plural, partial control is not an option:

(17) a.   * Bill told Ben he preferred to meet each other at 6

      b.   *Bill told Ben he regretted having talked about themselves

The key difference then between exhaustive control and partial control is that in partial control a syntactically singular subject can control a semantically plural PRO, an option unavailable in exhaustive control constructions. In all other respects, partial and exhaustive control share the same properties and behave in unison with regard to the aforementioned diagnostics in (13).

Aside from (13)b), the constraints to which obligatory control conforms are all structural ones, making a syntactic account for this relation more obvious then a purely semantic one such as in Culicover and Jackendoff (2001), where this structural pattern remains incidental. But it does not argue for any particular account within the syntax, since the same properties have been used to reduce control to predication (Williams 1980), to binding (Manzini 1983) and more recently, to movement (Hornstein 2000).

1.2.3 Properties of Non-Obligatory Control

The criteria that we have just seen to be operative in obligatory control do not seem to regulate non-obligatory control. Williams (1980) noted that although non-obligatory control relations may conform to some obligatory control criteria, they do not exhibit all and in some instances lack them entirely. In sum, these restrictions amounted to a need for a unique, local, c-commanding antecedent. These criteria alone, give us the following candidates for non-obligatory control: infinitival subject clauses, as in (18), controlled interrogative complements, shown in (19), verbal gerunds as in (20), control with implicit arguments, displayed in (21) and lastly, long-distance control, in example (22):

(18)   [To go to the lecture drunk] wasn't one of your best ideas

(19)   [Peter knows [CP how [to fix the head gasket]]]

(20)   [Walking back home yesterday], a brick fell on my head

(21)   a.   [It is fun [to dance]]
            (It is fun for x, for x to dance)

       b.   [[To finish off one sentence in peace] would be nice] (for x)

(22)   Peter said that to get there on time would be very difficult

Infinitival subjects, verbal gerunds and implicit control constructions have no structurally represented antecedent at all. The interrogative complement, illustrated in example (19), does have a non-local argument in the super-ordinate clause, but this is

not the antecedent for the understood subject in the infinitival, which carries a generic interpretation. The long-distance control case, as its name suggests, breaks the locality condition, and it also tolerates split antecedents, separating it further from obligatory control, which does not:

(23)   Peter said to Paul that to get there on time would be very difficult for them

In fact, the properties that obligatory control shares with other syntactic relations, which we have just seen to be absent in non-obligatory control should be reflected in an optimal theory of control. With that in mind, the third of our desiderata for control can be stated:

(24)   III.   Our theory of control should provide an account for why obligatory control is subject to four conditions, which non-obligatory control is not: there is an obligatory antecedent, which must be unique, be local and must c-command its understood subject.

In contrast to the absence of restrictions that characterise non-obligatory control, this relation is subject to a semantic restriction which obligatory control is not. As noted in Manzini (1983), in all examples of non-obligatory control, the understood subject must be interpreted as human. To see the contrast between the two relations, consider the examples below. In obligatory control, in both subject- and object-control cases, it is possible to have non-human subjects acting as antecedents of the infinitivals:

(25)   a.   This book$_i$ promises PRO$_i$ to be a great read

        b.   The film$_i$ tries PRO$_i$ to convey a humane side to Pol Pot.

        c.   The farmer needed the crop$_i$ PRO$_i$ to exceed last year's quota

Non-obligatory control, however, does not have this option; its understood subjects must always be human. To see this, look at (26)a) below. In this example, no verb has been used that forces a human interpretation of the infinitival subject, yet human it must be. Despite the inclusion of a potential antecedent, namely *the book* and the fact that no human is mentioned, *the book* cannot act as antecedent for the infinitival, which is interpreted as a 'generic human' (to be better defined as we proceed), where its most accurate paraphrase is provided in (b) and not (c):

(26) a.   This book is a great example of how to entertain children.

      b.   This book is a great example of how one can entertain children

      c.   This book is a great example of how books can entertain children

With the delineation between obligatory and non-obligatory control in place, we are ready to state the fourth of the desiderata that should fall out from the theory of control to be developed within:

(27) IV   Our theory should account for why the understood subject in non-obligatory control must be human.

1.2.4 Blurring the distinction between Obligatory and Non-Obligatory Control

One of the principal claims in Bhatt and Izvorski (1998) is that there is no difference between the PRO-subject in arbitrary control constructions and the PRO-subject in obligatory control constructions. In each instance, the same element is operative, namely a dependent one that always requires an antecedent for its interpretation. The difference that these PROs exude in their interpretation is due to their respective controllers and not to any intrinsic distinction within the empty category itself. To motivate a uniform analysis of PRO, the authors claim that controlled PRO can occur in all the environments in which PRO_{arb} can and the examples below are offered as evidence (Bhatt and Izvorski's 3 and 4):

(28) a. $Matt_i$ knows how PRO_i to behave himself

      b.   Matt knows how PRO_{arb} to behave oneself[5]

(29) a.   It's fun PRO_i to indulge $ourselves_i$

      b.   It's fun PRO_i to indulge $oneself_i$

However, none of these examples qualify on present criteria as instance of obligatory control. Both interrogative complements and control by implicit arguments are aligned under non-obligatory control within the current analysis, making the parallelism between the two entirely expected from this perspective. This is not purely terminological because under the present account, placing interrogatives under obligatory control makes a prediction, namely that the semantic restriction, which demands that understood subject in non-obligatory controlled clauses be minimally

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[5] This sentence is unavailable to me and to a number of other native speakers of standard English with whom I conferred.

interpreted as human, is suspended – a fact not borne out by the data. I repeat the relevant example below, which shows that despite providing a potential antecedent and not using a verb which requires a human agent, the understood subject of the infinitival must be human:

(30)   This book is a great example of how to entertain children

So making a different cut is not without repercussions, because that cut will make different predictions about what sentences can mean. If we take a couple of examples whose obligatory control status is uncontroversial, the distributional evidence in fact favours a demarcation between the two relations rather than their assimilation:

(31)   a.   Peter tried/promised/hoped to control himself

        a'.   *Peter tried/promised/hoped to control oneself

        b.   Peter persuaded/ordered Paul$_i$ to behave himself$_i$

        b'.   *Peter persuaded/ordered Paul to behave oneself

I return in the next section to two criteria for obligatory control leaned on in this thesis, yet rejected in Landau (2000), namely c-command and the ban on split antecedents. I will demonstrate that contra Landau (2000), both are very much operative in the obligatory control relation, thereby re-establishing their status as criteria to which obligatory control relations must adhere.

1.2.5 A note on the c-command- and the split-antecedent-restriction on obligatory control.

Landau (2000) has questioned whether both the c-command restriction and the ban on split antecedents on obligatory control actually hold, citing the following as counter examples:[6]

(32) a. %Yesterday, it spoiled Marys$_1$s' mood PRO$_{1/*arb}$ to listen to the news

      b. PRO$_1$/Bill's$_2$/his$_{1/*2}$ making that comment was very rude of John

(33) a. %John$_i$ promised his son$_i$ PRO$_{i\&j}$ to go to the movies together

      b. %John$_i$ persuaded Mary$_j$ PRO$_{i\&j}$ to kiss in the library

(Landau's 10 a & b and 11 a & b)

(32)a) shows apparent control of PRO by a DP embedded within the matrix object, thereby breaking c-command and (33) is intended to illustrate that PRO in obligatorily controlled clauses can tolerate split antecedents. This is so in both typical subject- (a) and object-controlled constructions (b).

The observation that syntactic relations adhere to c-command has become firmly established since its introduction in Reinhart (1976); naturally this does not render the c-command condition exempt from questioning, but it does mean that the justification for its suspension must be very strong. Before addressing Landau's particular

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[6] The '%' mark is my own addition and based on my own judgements and those of six other native speakers with whom I conferred. It represents the fact that these constructions are considered marked or ungrammatical by over half of my informants.

example, it is worth noting the extent to which this restriction bears on grammatical dependencies generally. Properties that hold of what are arguably syntactic dependencies have been clearly distinguished from those that hold of non-syntactic operations, as demonstrated in Koster (1986). Five properties that are manifest in the binding of anaphors, of negative polarity items, in movement and in predication yet absent in extra-syntactic affairs, are illustrated. These properties are listed below:

(34) a.   obligatory presence of an antecedent

      b.   c-command by that antecedent

      c.   uniqueness of that antecedent (i.e. no split antecedents)

      d.   permission of antecedent to take multiple dependents of the same type

      e.   locality restriction between antecedent and its dependent(s)

For present purposes it suffices to concentrate on (b) and (c), namely c-command and the ban on split antecedents. Antecedents must conform to these conditions in regard to their dependents in operations of movement, as in (35), in binding (both negative polarity items and reflexives), as in example (36) and secondary predicates, as shown in (37) (see especially Neeleman and van de Koot 2002).

(35) a.   *Which book$_1$ did you wonder which CD$_2$ Ben bought t$_{1\&2}$

                                                          (*split antecedents)

      b.   *Ben said to t$_{who}$ that Bill wondered who Betty bought pyjamas

                                                          (*c-command)

(36) a.   *Ben$_1$ showed Bill$_2$ himself$_{1\&2}$ (*split antecedents)

      b.   *Ben$_1$'s mother looked at himself$_1$ (*c-command)

(37) a.   *Ben_1 met $Bill_2$ $drunk_{1\&2}$ (*split antecedents)[7]

       b.   *$Bens_1$'s brother met Bill $drunk_1$ (*c-command)

Let us concentrate on c-command first. Given the rather robust nature of this condition and extent of its grammatical applicability, the evidence for its disposal must be pretty bullet proof. Rejecting c-command on the basis of the two counter-examples in (32) is perhaps not sufficient justification at a conceptual level, but that aside, empirically, one is treading rather thin ground, since lone examples are quite vulnerable to being explained away, and with that one's original argumentation. The example in (32)a falls short because it is not an indisputable example of obligatory control and for c-command to be rejected as a restriction on this relation, it must be tested on examples whose obligatory control status is not in doubt. Such examples are conspicuously absent:

(38) a.   *$Bill_1$'s brother persuaded Ben PRO_1 to dance

       b.   *Ben_1's teacher tried PRO_1 to detain Bill

       c.   *[The cousin of [Ben_1]] hoped PRO_1 to win the title

The example in (32) in fact meets one of Landau's diagnostics for non-obligatory control, namely permission of long-distance antecedents:

(39) Every boy_1 said that it spoilt the party PRO_1 to listen to his father playing the tuba.

---

[7] Note that this sentence is compatible with a situation in which Ben happened to be drunk when he met Bill, who was also drunk, but syntactically speaking, this is incidental; the depictive can be predicated of only one of these arguments.

Given the availability of long-distance relations, Landau's example cannot be classified as obligatory control with confidence and its validity as a counter to c-command is less solid. The example in (32)b) is similarly problematic because it also cannot be categorised as obligatory control with confidence. The availability of the pronoun, for example, would suggest that it be classified as non-obligatory control. The obligatory co-reference between the understood subject of the gerund and *John* stems from the fact that pragmatically, it is very odd to say that it is rude of *John* for *Bill* to say something. Support for this comes from an example that does not involve control, but the semantic anomaly remains:

(40)   #That Bill made that comment was very rude of John

So much for the rejection of c-command, but let us return to the issue of split antecedents and those particular examples which were the motivation for renunciation of this condition:

(41)   a.   %John$_i$ promised his son$_j$ PRO$_{i\&j}$ to go to the movies together

        b.   %John$_i$ persuaded Mary$_j$ PRO$_{i\&j}$ to kiss in the library

Turning to the example in (41)a) first, note the category of the verb in the super-ordinate clause, which under Landau's analysis (see Landau 2000, p38, (29f)) is a so-called 'desiderative' verb and thus falls within the class of partial control verbs. This means that it will license a reading in which the reference of the understood subject of its controlled clause can exceed that provided by the controller. That is, we expect those speakers who accept partial control constructions to be able to get a reading that includes both the subject (i.e. the controller) and additional individuals. These additional individuals may, but need not, be represented structurally, so the sentence should be compatible with a reading in which the matrix object is included in the reference of PRO. This possibility, therefore, does not support an argument for split

syntactic antecedents. One prediction which falls out from this argument is that only those speakers who accept partial control constructions will accept (41)a) and, although wider corroboration is needed to make this result worth its salt, the speakers I have asked so far do conform to this expectation: the same four speakers that reject partial control constructions absolutely, also reject the purported split antecedent effect in the *promise* example, whereas Landau's informants accept both.

The object-control example in (41)b) is also problematic as evidence against the split syntactic antecedent restriction for the very same reason, namely the type of verb used in the embedded clause. *Persuade* is omitted from the categorisation of partial and exhaustive control verbs in Landau (2000), on page 38, leaving us unclear as to its classification. If it is an exhaustive control verb, then the fact that some speakers accept (41)b) is potentially problematic. At first glance, the one type of verb class in the exhaustive control category with which it might pattern is the implicative class; *force* and *compel*, for example, are categorised as such (see Landau 2000, page 38). A prime example of an implicative verb is *manage*, a verb which the reader will recall from a repetition of (15) below, does not license a partial control reading:

(15)   a.   Ben₁ managed [PRO₁ to eat all the pies]

        b.   *Ben₁ managed [PRO₁₊ to eat all the pies]

One of the decisive tests used in Landau (2000) to determine whether or not a verb is implicative is to look at its complement. The complement of an implicative verb should lack tense and hence be unable to bear a tense at odds with that of the matrix verb:

(42)   *Yesterday, John managed to solve the problem tomorrow

But *persuade* does not pattern with *manage* in this respect:

(43)   Yesterday, John persuaded Peter to take his aunt to the pictures on Friday

Indeed, *force*, which is categorised as implicative and hence an exhaustive control
verb in Landau (2000), also exhibits this anomaly:

(44)   Yesterday, John forced Peter to take his aunt to the pictures on
            Friday.

Landau (2000) develops an argument such that the crucial factor distinguishing
partial from exhaustive control verbs is (semantic) tense. Unlike partial control
complements, exhaustive control complements have no independent tense and hence
they must be interpreted as simultaneous with the matrix event:

(45)   PC-complements are tensed; EC-complements are untensed

The failure of both *force* and *persuade* to pass this test, implies either that implicative
verbs straddle the partial- and exhaustive control class, or that they are not
implicative verbs. Which ever it is, the original example's credibility as proof of split-
control being licensed is somewhat undermined. To test reliably whether speakers
can truly accept split syntactic antecedents it is perhaps better to choose verbs that do
not carry this complication. Once we do so, the availability of split antecedents for
the understood subject disappears:

(46)   a. *John$_1$ told Mary$_2$ PRO$_{1\&2}$ to put a whoopee cushion on a chair in the
           library.
        b. *John$_1$ asked Mary$_2$ PRO$_{1\&2}$ to eat their lunch in the playground

Having then provided reasons against Landau's rejection of both c-command and toleration of split antecedents by dependents, I suggest that both these conditions be re-instated as conditions which obligatory control constructions must meet. With these criteria in place, I turn in the next section to attempts at reducing control to other syntactic relations.

1.3 Reducing Control to Other Syntactic Relations

In this section, I go on to two proposals which seek to reduce control to two entirely separate fields. Hornstein (2000) is a movement-based theory of control, where as Landau (2001) is agreement-based, but despite their differing directions, these theories share some similar ideas and problems. In particular, given that in Chomsky (1998), Agree is the only way in which a grammatical dependency can be established, movement must also be an instantiation of Agree. I start with Landau (2000).

1.3.1 Obligatory Control as Agree

In this section, I look at a reduction of obligatory control to Agree. The workings of this proposal are quite intricate and in what follows I will not take issue with particular detail of this proposal; problems are raised at a more general level and I will focus on three in particular:

(47)   a.   In this theory, PRO is retained and multiple lexical entries for PRO must be assumed.

       b.   The relation between the controller and PRO is indirect

c. Agree obscures the contrasts which distinguish control, binding and movement.

But in order to be clear that the above are indeed issues that remain unresolved in Landau (2000) and why they are problematic, the reader will benefit from a an outline of how the mechanism works.

On this account, three Agree relations are posited, which collectively comprise the control relation(s). The key players in these Agree relations are a functional head in the matrix clause, the matrix DP 'controller', PRO and Agr. In short, it is proposed that agreement is triggered by an uninterpretable feature on the functional head in the matrix clause, and this head enters into a complex of agree relations including both the DP-controller and PRO in exhaustive control, but the DP-controller and Agr in partial control:

(48) a. Exhaustive Control: $[.. F .. DP .. [_{CP} [_{TP} PRO \ T\text{-Agr} [_{VP} t_{PRO}]]]]$

          Agree 2   Agree 1

          Agree 3

b. Partial Control: $[..F .. DP .. [_{CP} T\text{-Agr} [_{TP} PRO \ t_{T\text{-Agr}} [_{VP} t_{PRO}]]]]$

          Agree 2   Agree 1

          Agree 3

We can look at a derivation of an exhaustive control sentence first, in which PRO is involved. This will help to clarify the triggers for each Agree relation and the motivation behind them. *Manage* is an implicative verb, which as we will see in chapter five, is not a verb that licenses partial control. In this example then, the reference of PRO is identical to that of its controller:

(49) Ben$_1$ managed PRO$_1$ to eat all the pies

The tree in (50) sets out the derivation: In Agree 1, the phi-features of T-Agr and the semantically singular PRO [-SP] are matched. The second Agree relation targets the matrix functional head, T and the semantically singular [-SP] DP-controller. In virtue of this Agree relation, T inherits semantic singularity from the DP. Now in Agree 3, T enters into an additional Agree relation with PRO, through which both T and PRO are matched for semantic number:

(50)

```
                    TP
                   /  \
                        T'
                       /  \
   T (ØSP→-SP)            VP
   |                     /  \
   |_____ DP(-SP)    V'
   Agree 2             /  \
                      V    CP
                          /  \
                         C    TP
                             /  \
   _____ PRO(-SP)  T'
   Agree 3                      /  \
                      T-Agr (ØSP)   VP
                      |            /  \
                      |____ t_PRO(-SP)  V'
                      Agree 1
```
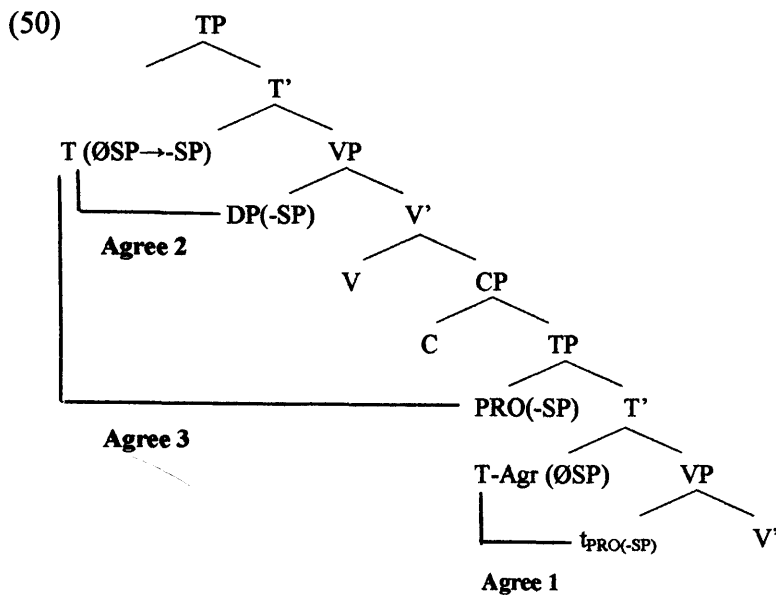
Notice the absence of any direct link between the matrix 'controller' and PRO, which enter into no relation with each other. Notice also, that the matrix functional head enters into two Agree relations, both times for the same feature, namely semantic number. But we will suspend comment until we have looked at a derivation for partial control, which will result in a completer picture of Landau's theory of control.

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For partial control, it is Agr in the infinitival which has a key role to play. Recall that in partial control, a semantically singular DP controls a semantically plural PRO:

(51)   The chair$_1$ decided PRO$_{1+}$ to gather early.

We saw in (48)b) that Agr raises from T to C. This movement is argued to be the consequence of the tense feature in C in the infinitivals that follow partial control verbs. Evidence for partial control complements carrying their own tense is made apparent by inserting a time adverbial in the embedded clause in conflict with one in the matrix clause. As we can see in example (52), such conflicts are tolerated in partial- , but not exhaustive control, indicating that the former houses an independent tense feature in its infinitival:

(52)   a.   Exhaustive Control:
              *Yesterday, John managed to eat all the pies tomorrow

        b.   Partial Control:
              Yesterday, the chair decided to gather early tomorrow

The derivation for the partial control sentence in (51) is illustrated in the tree in (53) and proceeds as follows: In Agree 1, Agr is checked by a semantically plural PRO, [+SP], but remains unspecified for semantic number itself, [ØSP]. Through Agree 2, the functional head, T, in the matrix clause acquires semantic singularity [-SP] from the DP-controller. T, now specified as [-SP], then enters into Agree 3 with the raised Agr, itself unspecified for semantic number, namely [ØSP]. Despite the [-SP] specification on T, Agree 3 incurs no mismatch between T and Agr in semantic number since [ØSP] and [-SP] are indistinguishable on functional heads:

(53)   FP
           /   \
                F'
              /   \
F (ØSP→-SP)   VP
   | /   \
   |___ DP(-SP)   V'
   Agree 2   /   \
              V   CP
                       /   \
                   C   TP
                 /   \   /   \
   |____ T-Agr (ØSP) C   PRO   T'
                                /   \
   Agree 3   t_Agr(ØSP)   VP
                              | / \
   Agree 1 |___ t_PRO(+SP)
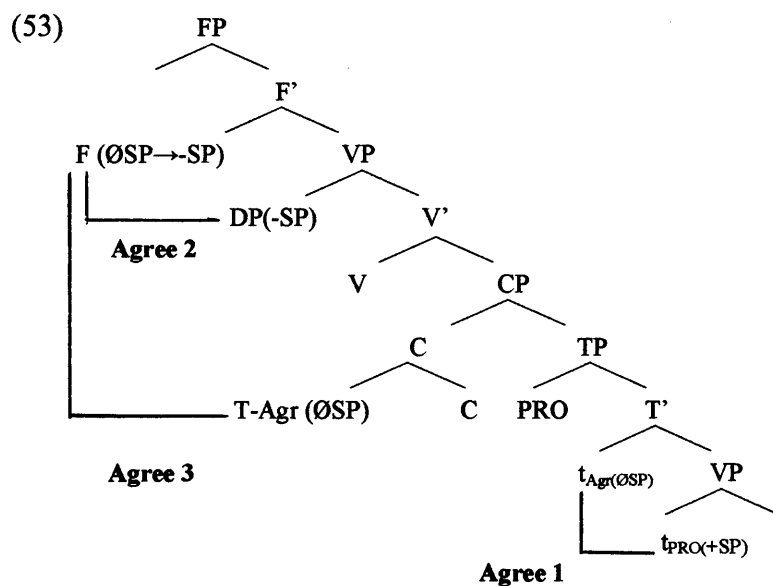
Notice again, the lack of any direct link between the controller in the matrix clause and PRO. Indeed, on this occasion even the functional head enters into no relation with PRO, it targeting Agr in C instead, leaving PRO quite irrelevant to the control relation.

With this outline of how the system of Agree in Landau's theory of control works, we can now return to the issues raised in (47), the first of which is the retaining of PRO. In Landau (2000) two lexical entries for anaphoric PRO are assumed (see Landau 2000 p8), one which is semantically singular and one that is semantically plural. Non-obligatory control in this work is also analysed using PRO, but in this relation PRO is taken to be a logophor. This theory does then remain dependent on an ambiguous element with conflicting properties, for which no overt counterpart exists. In Landau's derivation of partial control, PRO has no real function, since the one Agree relation it does enter into, namely that with Agr, does not result in feature matching, Agr remaining unspecified for semantic number. Building on Borer (1989), which we

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will see in more detail later, the anaphoric nature of the infinitival clause is pinned to Agr, despite PRO's classification as an anaphor. The control relation, traditionally understood as being between a controlling DP and PRO, has been secured without any contribution from PRO, since it is the double probing that gives us obligatory control. Given that PRO is in a sense accidental to the control theory as developed in Landau, one might ask whether it would be judicial to go a step further and dispense with PRO entirely. Of course, evidence for PRO, as we saw in section 1.1 is extensive, but later we will see that these subject properties of infinitivals can be accounted for without recourse to PRO.

The absence of any contribution from PRO in partial control constructions brings us to the second issue raised in (47), which is the lack of any direct link between PRO and the matrix controller, their only connection being indirect via the functional head in the super-ordinate clause. A number of points require attention here, the first of which is how to account for the structural restriction in English between a DP-controller and PRO, namely c-command of the latter by the former, if there is no direct relation between them? There seems to be nothing that prevents a derivation in which the functional head dominates both the DP-controller and PRO, yet PRO occurs higher in the structure than its controller, a structure unattested in English:

(54)

$$T \quad \begin{array}{c} \diagup\diagdown \\ \diagup\diagdown \\ PRO_i \quad \diagup\diagdown \\ \quad DP_i \end{array}$$
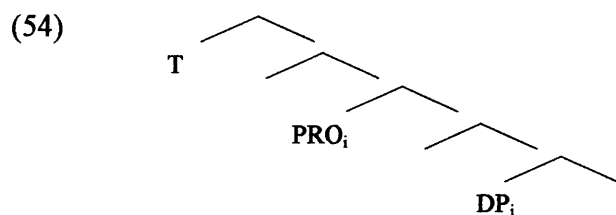
Of course Landau (2000) rejects c-command as a defining restriction of obligatory control, but we saw in section 1. 2 that the particular example provided as evidence

could not be relied upon, since it allowed long-distance control, a property which, like myself, Landau uses as a diagnostic for non-obligatory control.

A second issue is the probing of two different elements for the same feature by the functional head. This has to be made possible in Landau's theory, since in this way one can ensure identity between the DP-controller and PRO. But it is not clear why T should enter in two Agree relations, probing two different goals for the same feature. What is the motivation for the second probing? In Chomsky (1998), Agree is the means by which uninterpretable features are checked against their interpretable counterparts. Thus the element with the uninterpretable feature is the probe, whereas the element with the interpretable feature is the goal. The probe attracts the goal. Such is the direction of the dependency. There is no sense in which the goal receives its specification from the probe, higher up in the structure. Landau's rendition of Agree is slightly different. Agree is triggered by an uninterpretable feature on the probe, T in subject-control structures, and a goal, which is PRO in exhaustive control, but Agr in partial control. And what makes PRO/Agr active for Agree is PRO's/Agr's anaphoric character, not an unchecked case feature. Note the change in the dependency relation: PRO and Agr, which are goals, are imposing a requirement on their probes. We see two examples of this, firstly in the exhaustive control derivation (see (50)): in virtue of Agree 3, where T is the probe and PRO the goal, PRO inherits semantic singularity from its probe. Secondly, in the partial control derivation (see (53)): in Agree 3, where T is the probe but Agr is the goal, Agr may or may not inherit semantic plurality from the probe. When it does, this amounts to a functional head receiving its specification from something higher up in the structure, which is a rather large step away from Agree as was. In Chomsky (2000), when a probe encounters two goals in its c-command domain, both with the interpretable counterpart of the unvalued feature it has, the probe takes the nearest goal and agrees with that, it doesn't agree with both. So if we transpose this to a derivation of exhaustive control a la Landau, the functional head should agree with the DP only:

(55)

```
            F (uF)      TP
                   DP(iF)     T'
                          T      VP
                                    TP
                                PRO (iF)
```
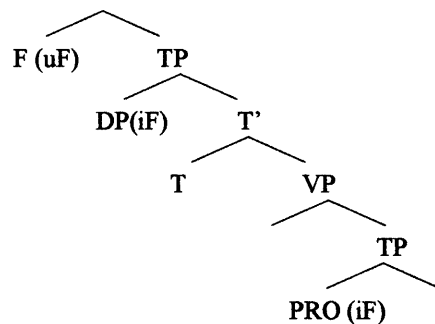
It seems that in order to ensure identity between the controller and PRO, Landau must introduce this second Agree relation, yet independent motivation for this repetitious step remains unclear. Chomsky's (1999) notion of a phase, in which uninterpretable features remain visible until the end of the super-ordinate phase, makes it a technical possibility, but this does not constitute any motivation for multiple agree relations in this particular instance. And if we were to license superfluous Agree relations generally, which are so in virtue of their not being registered until the end of a said phase, we are left with the question as to why the computational system would be set up to generate multiple redundant Agree operations.

The last question that (47) raises concerns a more general issue in regard to Agree lying at the core of movement, binding and control. In reducing control to Agree, and by hypothesis binding too, we are left with one operation at the source of a number of relations, which despite their shared properties, differ in important respects. So how is the contrast between binding and control and also movement and control to be reflected in a theory which regulates these relations through the same operation? This question can also be asked of the next theory we look at, namely Hornstein's (2000) reduction of control to move.

1.3.2 Obligatory Control as Movement

The reduction programme in Hornstein (2000) not only removes the control module from the grammar, but also dispenses with PRO. In this theory, the null subject in a controlled infinitival clause is an NP-trace, whose distribution reduces to one of A-relations and interpretation to that of a foot of a movement chain. In ridding the grammar of the control module and dispensing with the uncomfortable null case theory of PRO (Chomsky and Lasnik 1993), Hornstein's approach has initial appeal. And the fact that collapsing control with movement necessitates a repudiation of the Theta-Criterion does not necessarily call for its rejection, since this criterion has been shown to simply not hold in a number of constructions (see Williams 1994, Hudson 2003). It is worth finding out whether the empirical ground such a theory can cover outweighs the losses.

In his reduction of control to movement, Hornstein takes on the MLC, or Shortest Move, as the condition that determines NP-trace's distribution. A-movement, such as in passive and raising constructions is limited to the closest argument position and when this position is filled, there can be no movement across this position to a higher one. This same condition is said to account for the locality of control. Here, too, the closest argument must be the antecedent of PRO:

(56)   a.   Ben$_i$ hopes [PRO$_i$ to leave soon]

        b.   Bill persuaded Ben$_i$ [PRO$_i$ to leave soon]

On the basis of this similarity between the two constructions, the Minimal Distance Principle, the interpretative constraint previously applied to control constructions (see

Rosenbaum (1967), is subsumed by Shortest Move. But for this to be viable, Hornstein must dispense with the Theta-Criterion. Movement into theta-position, such as in (57), results in the chain (Ben, t) having two theta-roles, that of 'leaver' and 'hoper'. The conception of theta-roles is reformulated; they are conceived as morphological features on predicates that can accrue on a DP as it moves to its ultimate position in the matrix clause. Theta-role assignment consists of a checking relation between an argument and a predicate bearing a theta-feature:

(57)   Ben$_i$ hoped [t$_i$ to leave soon]
            ($\theta\theta$)   (θ)

The properties of obligatory control, as set out in (13) in section 1.2 can be derived if control is an instance of A-movement: By definition, a trace, as a residue of copy and merge operations, must have an antecedent, and being an example of A-movement, this antecedent must be local to and c-command its trace. And lastly, a trace cannot be associated with two antecedents.

Hornstein notes that it was the Theta-Criterion that necessitated the introduction of the control module. Indeed, he argues that a grammar without the Theta-criterion can be simplified further, by dispensing with all rules of construal, binding included. The distribution of local anaphors is argued to parallel that of obligatory control, making them amenable to a theory in which they also are understood as the by-product of movement operations:

(58) a.   *Ben reproached herself
      b.   *Ben's mother reproached himself
      c.   *Ben thinks that Bill reproached himself
      d.   *Ben told Bill about themselves
      e.   Ben reproached himself and Bill did too

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f.   The unfortunate remembers himself receiving a medal

g.   Only Churchill remembers himself giving the speech

Just like PRO/NP-trace, the reflexive requires an antecedent which is local and in a c-commanding position, as demonstrated in (58)a – c). Split antecedents are not tolerated, as in (d) and in (e), only a sloppy reading under ellipsis is possible. A 'de se' reading is the only interpretation possible in (f) and lastly in (g), Churchill is the sole possessor of the relevant memory.

So under this analysis, PRO and anaphors are the same kind of animal, namely NP-trace. The reason a reflexive is pronounced, whilst PRO and NP-trace are not, is because the verb that selects a reflexive has a case feature whose checking is obligatory. This reflexive, like NP-trace, carries a theta-feature, as does its antecedent; so again we have an A-chain with two theta-roles:

(59)   John liked himself
        {$\theta\theta$}   {θ}

That PRO, NP-trace and lexical anaphors share similarities, all being +anaphoric, is evident, but accepting this as a truth does not imply that they are one and the same entity. Indeed problems with Hornstein's proposal have been amply documented (see especially Brody 1999, 2000, Cormack and Smith 2002 and Landau 2001) and what follows is not a comprehensive critique. Again I concentrate on two particular problems because they bear relevance to the proposal that will be ultimately adopted here. The first concerns Horstein's argument that the locality restrictions on control and movement can be subsumed by the MLC, the second, his rejection of the Theta-Criterion.

Contrary to there being a perfect parallel between control and movement in terms of their locality restrictions, in both control and binding, there are occasions on which the closest c-commanding argument can be skipped:

(60) a. Bill$_i$ told Ben$_j$ about himself$_{i/j}$

      b. Ben$_i$ promised Bill PRO$_i$ to leave soon

Shortest Move states that the only possible antecedent for a dependent is the closest c-commanding argument, incorrectly rendering *Ben* the only possible antecedent of the reflexive in (a) and *Bill* in (b). For no constructions which uncontroversially involve move is Shortest Move broken, which makes it unlikely that it is this absolute condition to which binding and control relations must adhere. In their reply to Culicover and Jackendoff (2001), Boeckx and Hornstein (2003) address the problem posed by verbs such as *promise*, but not entirely convincingly. They retain the argument set forth in Hornstein (2000), namely that *promise* is marked, backing this up by citing acquisition studies in Carol Chomsky (1969) that have shown a delay in the child's mastering of this construction. The reason the construction is tricky for the child to grasp, they claim, is that the object of *promise* is headed by a null preposition, and it is this null preposition which the language learner has difficulty detecting. They show how semantically similar verbs behave in parallel fashion, only with the preposition being overt (Boeckx and Hornstein's 5):

(61) a. John promised [P$_{null}$ Mary] [to leave early]
      b. John vowed/committed [to Mary] [to leave early]

The example above is likened to examples with raising predicates that have an experiencer:

(62) a. John seemed to Mary t to be tired

   b. John struck [P$_{null}$ Mary] t as tired

The parallelism between the above examples is questionable, in that *promise* does not allow a PP-complement when it takes an infinitival:

(63) a. I promised someone to leave

   b. *I promised to someone to leave

Furthermore, the introduction of a null element into the syntax carries with it the responsibility of providing evidence for that element. With which verbs does this null preposition materialise, for example and what is its semantics? Without such evidence, the introduction of another null element for one particular problematic example seems to be somewhat ad hoc in (61).

The similarities between control and binding do indicate that the two are rather similar syntactic relations. But the whole reduction of one relation brings with the danger of losing sight of the differences that distinguish these relations (see esp Lasnik (1992)) and their further collapsing with a third, namely move, leads to serious complications of Theta Theory. Let us return to the example in (10), elaborated on below in (64), in which PRO, as a trace of movement, receives a theta-role in its base position, and another at its landing site; an operation that violates the condition on well formed chains, which holds that thematic relations hold between chain roots only (Brody 1995). If these two elements are one and the same, and we then analyse examples such as (64)b) and (b') as NP-movement, the reason for the contrast between (64)a) and (a') is forfeited. As Brody (1999) has pointed out in detail, we lose the explanation for why an example like (64)a') is impossible (a' = Brody's no 16).

(64) a.   Bill$_i$ was hit t$_i$ b.   Bill$_i$ seems t$_i$ to like Ben

      a'. *Bill$_i$ hit t$_i$ b'. *Bill tried t$_i$ to like Ben

Hornstein (2000) answers for the ungrammaticality of such examples by means of the
transitive verb's unchecked Accusative case feature. The derivation in (64)a') is
saved by inserting the Acc-carrying morpheme *self*, which forms a complex with *Bill*
in its initial position, as in (65)a. Once *Bill* has raised to check its case features, the
Accusative pronoun *him*, must be inserted to provide morphological support for the
bound morpheme, self, as in (b).

(65) a.   Bill likes t$_{Bill}$-self

      b.   Bill likes himself

But with neither *him* nor *self* forming part of the numeration, it is not clear how
insertion of *self* and then *him*, is less expensive an option than sole insertion of *him*,
resulting in the unwanted sentence in (66). His disposal of Binding Theory prevents
any appeal to Principle B to rule this pronoun insertion out:

(66) *Bill$_i$ hit him$_i$.

But economy aside, there is another reason to suggest that a reduction of binding to
movement is not in the right direction, namely the occurrence of reflexives in
conjuncts, which are not a possible movement configuration:

(67) The boys spoke both to the girls and each other

The Co-ordinate Structure Constraint (Ross 1967) bars movement out of one conjunct, which means that a movement-based derivation of (67) is not available and hence the sentence should not be possible, contrary to fact.[8]

To return to the newly conceived 'PRO-trace' in the examples in (64), this trace would have non-trivial differences from NP-trace in terms of its thematic and case properties (see Brody 2001). Only a chain headed by PRO-trace can have a theta-role assigned to its head. In effect we are left with NP-trace 1, and NP-trace 2, setting us on a return path towards the two separate elements we began with. Trace 1 occurs only in the subject position of infinitivals, whereas Trace 2 occurs in all kinds of positions. Despite Hornstein (2000) not relying on PRO, then, the trace that he introduces for control is at odds with the first desideratum of the theory to be developed here, which I repeat below:

(68)   I   Our theory of control should not rely on an ad hoc category such as PRO

To take another problematic example from Brody (1999), if the head of a chain can be thematic, we lose an account for the different distribution displayed by control-type verbs versus ECM-type verbs in raising and control contexts. They do share similarities in that they are both transitive and so must assign accusative case, and also both can passivise, but where as *attempt* can control, *believe* cannot:

(69)   a.   John attempted PRO to leave

        b.   *John was attempted t to leave

        c.   *John believed PRO to have left   .

---

[8] Note that the example cannot be explained away by a suggestion that it is biclausal, because of the ungrammatical:

(1) *The boys spoke both to the girls and the boys spoke to each other

d.　　John was believed t to have left

Previously, the different government requirements on NP-trace and PRO answered for the differences in their distribution. NP-trace must be governed and so cannot occur in the infinitival clause, where as PRO must remain ungoverned, so sits happily in the subject position of an infinitival clause, but not in a complement to an ECM verb, from where it would be governed by this verb. Hornstein (2000) dispenses with government and allows chains to have multiple theta-roles, making it difficult to see how Move could distinguish between the distributional differences of these examples.

Other difficulties inherent to a movement-based enterprise have been documented and the aim here has not been to list them all. But focusing only on those mentioned, it seems that collapsing control with raising carries with it significant empirical set backs. Loss of the theta-role and the blurring of distinctions between control and movement in particular are two problems that any subsequent theory of control might try and avoid. But as Boeckx and Hornstein (2003) in their reply to Culicover and Jackendoff (2001) say, "...control properties largely reflect structural properties of the syntax," and it is this indisputable fact that drives the search for a largely syntactic answer for control. In the next section, I look turn to binding based analyses of control. What will become apparent from these is the gradual reduction of PRO's importance to this binding relation. Ultimately, the theory to be developed here will have most in common with a modified binding theory; it will share with Hornstein (2000) the view that obligatory control requires a syntactic representation and will also cater for the data without PRO. But unlike Hornstein (2000), the properties of the subject in the infinitival are not lost, but reinterpreted in terms of the infinitival's external theta-role. But I turn to the present account's precursors first, which reduce obligatory control to binding, yet continue to lean on PRO.

1.3.3. Obligatory Control as Binding

1.3.3.1 Similarities between obligatory control and binding

A reduction of control to another existing grammatical dependency results in a more restrictive theory than one which creates a new category of dependency specifically for control. If the latter is assumed, we risk losing explanatory force, since we can place any problematic data within this new category, the boundaries of which are not closely defined to begin with. The preferred route, therefore, is to stick to the narrower hypothesis until we encounter data that forces us towards a wider theory. But there remains the issue as to which of the existing grammatical dependencies provides the most promising route. Both Manzini (1983) and Koster (1986) argue that the structural similarities between binding and obligatory control are sufficiently similar to warrant a reduction of the latter to the former. Koster (1986) represents an attempt to encapsulate the core structural properties that hold of all syntactic dependencies, binding, obligatory control and movement included. The configurational matrix comprises this group of structural properties. We have seen these already in section 1.2., which focused on the properties of obligatory control, but I repeat them below:

(70)   a.   obligatoriness
       b.   uniqueness of antecedent
       c.   no split antecedents
       d.   locality

The four properties comprising this matrix are not construction specific. And we can group anaphoric binding and control together on the basis of these properties. Both

reflexives and obligatorily controlled PRO require local antecedents and these antecedents must c-command them:

(71) a. Ben_i trusted $himself_i$

      b. Ben_i tried PRO_i to dance

(72) a. *$Bill_i$ said that Ben trusted $himself_i$

      b. *$Bill_i$ said that Ben tried PRO_i to dance

(73) a. *$Bill_i$'s brother trusted $himself_i$

      b. *$Bill_i$'s brother tried PRO_i to dance

But the properties of the configurational matrix, as exemplified in the examples above, are not decisive, since they do not distinguish binding and control from the trace of movement, for example, which also requires its antecedent to be in a local and c-commanding position:

(74) a. The $ball_i$ was hit t_i

      b. *The $ball_i$'s owner was hit t_i

      c. *The $ball_i$ seemed that it was hit t_i

But crucially, in binding both the antecedent and the reflexive are arguments, receiving a theta-role. The same is true of obligatory control; the controlling argument has a theta-role as does the verb in the infinitival complement:

(75)   a.   Ben amused himself
                 θ θ

      b.
            Ben hoped to win
            θ θ

This is not so for A-movement, as traditionally conceived, however, where only the foot of the chain is a theta-role recipient:

(76)   Ben was admired t_{Ben}
                               θ

What marks a further distinction between binding and obligatory control on the one hand and movement on the other, is a distributive difference already noted in the previous section. Unlike movement, in both binding and control configurations, it is sometimes possible to skip the closest c-commanding antecedent:

(77)   a. $Bill_i$ showed Ben_j $himself_{i/j}$ (in the photograph)

      b. $Bill_i$ promised Ben PRO_i to dance

So whereas the correct generalisation for A-movement is that only the closest c-commanding argument is a possible antecedent, this is too strict for binding and control. Their locality restriction must be formulated slightly differently; namely reflexives and PRO must be bound by one of the arguments of the next predicate up:

(78)   Locality for Binding and Control:
       Reflexives and PRO must be bound by an argument of the immediately   c-commanding predicate. If that predicate has two arguments, one of those arguments can be skipped.

Of course, the flexibility that binding shows in regard to its antecedent choice in (77)a) is different to that in the control example, where only the non-local argument can be PRO's controller. As argued in Koster (1986), the distinction between binding and obligatory control in this respect, must be traced to the properties of the control verb. The verb in (77)a) is not a control verb and does not, therefore, designate a particular argument as the reflexive's antecedent. This is the residue of obligatory control that is semantic; in all other respects obligatory control patterns with grammatical dependencies generally, but the relation it simulates more than others is that of binding and we will seek to account for this by stating it as the fifth of our desiderata:

(79) V   The theory should explain why anaphoric binding shares a substantial number of properties with obligatory control.

Manzini (1983) provides an excellent example of how Binding Theory can accommodate obligatory control. A slight modification of Chomsky's (1981) binding conditions, together with a newly conceived Case filter, covers vast empirical terrain, demonstrating the viability of reducing control to Principle A. But, as Manzini herself notes, her modification to what constitutes a binding domain means that PRO is wrongly predicted to be able to occur in the object position of a subject-less nominal, with PRO carrying a reflexive or arbitrary interpretation:

(80)   *[Pictures of PRO] please the boys

The former binding conditions, as constructed by Chomsky, correctly rule this construction out. PRO is governed by the preposition, and government, presupposes a governing category. Since PRO's defining property is that it must not have a governing category, the above example is not predicted to occur. This solution is not

available to Manzini, however, because her modification of a binding domain has the effect such that an element which is governed does not necessarily have a governing category. For the detail of this proposal I refer the reader to the text itself, it suffices to note for present purposes, that her modification necessitates the claim that anaphoric empty categories must lack case. In (80), PRO is assigned case obligatorily by the preposition, which correctly rules it out. The obligatory assignment of case departs from the Case filter as widely understood, which, in its original guise, states only that every overt NP must be assigned case. The extensive empirical coverage of this paper, however, reinforces the reduction of control to binding, although it would be advantageous if a binding theory could avoid introduction of a new anti-case requirement, for the prohibition of PRO in the one example in (80).

1.3.3.2. Differences between obligatory control and the binding of lexical anaphors

In contrast with the similarities shared by obligatory control and binding, there are some important differences between the distribution of PRO and lexical anaphors that a reduction of control in this direction must avoid. In particular, as pointed out in Lasnik (1992), the proto-typical position for lexical anaphors is the direct object position, as in (81)a), but a controlled PRO in this same position is never possible (81)b).

(81)   a.   John injured himself

        b.   *John injured PRO

(Lasnik's 7 & 8)

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This is essentially a question as to why controlled objects are universally unavailable and will form the sixth of our desiderata for the theory of control to be developed:

(82)   VI   Our theory should rule out controlled objects

Attempts have been made to attribute the distributional difference to case. The transitive verb assigns case obligatorily, but PRO can only receive null case. This argumentation would explain the contrast between the following examples:

(83)   a.   John believes himself to be clever

        b.   *John believes PRO to be clever

The matrix verb in the example above is an ECM verb, so called because it exceptionally case marks the subject of its complement. Thus although this allows the reflexive in the subject position of the complement in (a), PRO, which cannot receive accusative case, is infelicitous in this same position, as illustrated in example (b). But this will not do, as the next set of examples attest:

(84)   a.   *John believes sincerely himself to be clever

        b.   *John believes sincerely PRO to be clever

                                                (Lasnik's 11 & 12)

If accusative case were responsible for the barring of PRO in (83)b, then the addition of an adverbial between the matrix verb and its complement, an intervention which prevents case assignment to the anaphor, as in (84)a, should render PRO possible in (84)b, contrary to fact. Something more than obligatory case-assignment is required

for the original problem in example (81) then, a problem which the present account will seek to address. In short, the absence of controlled objects will be tied to syntactic selection on the part of the control verb, which neither of the verbs in (83)b) or (84)b) are. But I will return to this issue in chapter four, where the structural restrictions on obligatory control are stated explicitly.

In the next section, I look at a binding based analysis of obligatory control, which retains the idea that the infinitival clause has anaphoric properties, but avoids the conclusion that the source of this anaphoricity is an anaphoric PRO subject. What such a theory demonstrates is that the differences between PRO and lexical anaphors (as documented in Lasnik (1992)) do not necessarily translate into differences between control and binding; the differences observed between control and binding refer to the elements involved in these relations, not the relations themselves.

1.3.3.3   Obligatory control as binding, without an anaphor

Borer (1989) treats control as an anaphoric dependency, but locates the source of this anaphoric dependency in Agr, rather than PRO. The binding dependency is one between anaphoric Agr and its matrix antecedent. Although Borer does continue to posit a null-element in the subject position of infinitivals, this is small pro – the same pro found in the subject position of finite clauses in typical pro-drop languages:

(85)   John$_i$ tried [$_{IcP}$ Infl$_i$ [$_{IP}$ pro$_i$ [$_{INFL}$ e] to leave]]

In (85) above, *John* binds, and thus transmits its index to infinitival Agr in INFL, this INFL having moved to C by a process of I-to-C movement.[9] INFL, having inherited the referential features of its antecedent, *John*, can now identify its subject, pro. As a

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[9] Borer takes this I-to-C movement to be optional, a process that has the effect of making the moved I the head of CP, thus more accurately labelled IcP.

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consequence there is an identity relation between *pro* and *John*, but one that has been established indirectly. The anaphoric relation is seen as one between the matrix antecedent and the clause within which pro sits. A lexical subject in an infinitival clause is ruled out by assuming that anaphoric Agr in English cannot assign case.

Any distinction between pro in non-finite clauses and pro in finite clauses, most notably that the former exhibits obligatory referential dependence whilst the latter does not, is derived from independent conditions, leaving the definition of pro constant throughout. Borer successfully reduces control effects to independently motivated conditions (the combination of anaphoric Agr in infinitives/gerunds together with the i-identification requirement for empty categories – see Borer (1989) for detail), thereby demonstrating that one can dispense with the anaphoric element, PRO. A question, however, that might be raised is whether it is necessary or desirable to replace PRO with another element, namely pro. Since the anaphoric dependency has been established independently of any null-element, an attempt at a continuation of this reduction, by positing nothing at all in this position, seems a more progressive option and one that will be built on in what follows. The hypothesis that there is no element in the subject position of infinitivals carries with it the advantage that there is no longer any need to appeal to the inability of anaphoric Agr in English to assign case, as an explanation of PRO's' peculiar distribution. This inability to assign case seems to be a forerunner of the Chomsky and Lasnik (1993) quasi-solution, namely that infinitival I can only assign null case, neither of which really constitute a move forward in trying to explain PRO's distribution.

In the following section, I introduce the aim of the proposal to be developed here, namely a binding based analysis of obligatory control, very much in the spirit of Borer (1989), but which dispenses with the notion of a structurally represented empty subject in controlled infinitivals altogether. The section will end with the list of desiderata collected throughout this chapter, which the present theory of control will

seek to meet. But before these desiderata are stated, I turn briefly to Bresnan (1982), which shares with this proposal the idea that control can be represented without PRO. But as we will see, this theory depends on the controlled infinitival being a VP, which, on the basis of evidence to the contrary, is a conclusion that the present proposal wishes to avoid.

1.4 A PRO-free Account of Control

Doing without PRO altogether is not an innovation of this particular thesis. Bresnan (1978 and 1982) and Brame (1977) are particularly well known PRO-free analyses. But these accounts differ from the one to be developed here in that they both analyse the controlled clause as a bare VP, which renders the control relation one of predication, a conclusion the present account wishes to avoid for reasons outlined in Janke 2003. But PRO-free control and bare-VPs need not go hand in hand, as I will now demonstrate.

1.4.1 Bare-VP Analyses

A precursor to the present analysis is that of Bresnan's LFG account, which also utilises no PRO. But the PRO-free account to be developed here diverges from Bresnan's account quite sharply, most importantly in the category of the controlled complement. A quick detour will illustrate how. At a superficial level, one of the differences between finite complements and infinitivals in English is that the former have an overt subject, whereas the latter do not:

(86) a. Bill said that [Ben should return later]
      b. Bill told Ben [to return later]

A question that arises from the difference these two complements exude in this respect is whether the infinitival complement in (86)b) should be analysed as fully clausal on par with the finite one in (a), or as a reduced clause. In the former analysis a null-subject is assumed, which has syntactic properties, but no phonological matrix. A recent example of an analysis that falls within this branch would be Landau (2000). In the latter, the lack of a phonetically felt subject is taken to reflect its syntactic absence and the infinitival is analysed as a bare VP. Such is the line adopted in the subject-free account of Brame (1976) and also that of Bresnan (1978 and 1982). In the LFG analysis such as Bresnan's there is no syntactic difference between subjects of the infinitival complement in (87)a) and that of (87)b) below.

(87)   a.   Ben seemed [to dance gracefully]
       b.   Ben tried [to dance gracefully]

Both of these relations fall under 'functional control'; the embedded and matrix verb share the same token as their subject, where the two functional slots are connected by an arc:

(88)

```
SUBJ:  Ben
VERB:  seemed
       hoped
COMP: SUBJ:
       VERB: to dance
```
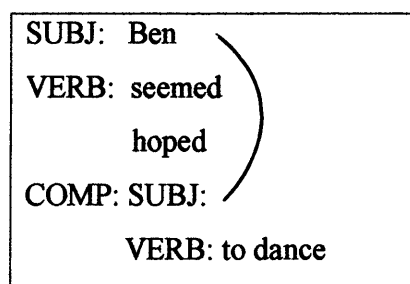
But in minimalist accounts these constructions are treated differently from each other in important respects. The former is taken to be an example of raising, in which the subject of the infinitival is assigned a theta-role by the embedded verb, before raising to become the subject of the matrix verb, which lacks theta-assigning capacity. In

contrast, the second example is analysed as involving control, in which both the embedded verb and the verb in the super-ordinate clause assign theta-roles to their syntactic subjects, PRO and *Ben* respectively. The identity relation between PRO and *Ben* is procured separately by another module altogether, namely the control module:

(89) a. Ben_i seemed [$_{TP}$ t_i to dance gracefully]

b. Ben_i hoped [$_{CP}$ PRO_i to dance gracefully]

Crucially, in the control case, the infinitival is analysed as a CP, whereas the raising complement is a lesser clause, namely a TP. The inability of PRO-subjects to raise out of their infinitivals is attributed to this extra CP-layer. In making no syntactic distinction between the complements of 'hope' and 'seem', a bare VP-analysis is stumped by the clausal nature of controlled infinitivals, some of which can host subjects introduced by complementisers, in contrast to 'raising' infinitivals, which lack this option:

(90) a. Bill hoped for Ben to win

b. *Bill seemed for him to win

Further support for there being a CP-layer in the infinitival complements of control verbs is provided by Dutch. The sentences in (91)a) and (b) are of subject- and object- control respectively. As is clear from the parentheses, the complementiser *om* in the infinitival complements is optional:

(91) a. Hij beloofde (om) te blijven   (Dutch)

    He promised for to stay

    'He promised to stay'

b. Hij haalde haar over (om) te blijven

He hauled her over for to stay

'He persuaded her to stay'

This is not true of the infinitivals following raising verbs:

(92) a. Hij schijnt te blijven

          He seemed to stay

      b. *Hij schijnt om te blijven

          He seemed for to stay

As the examples in (92) demonstrate, *om* is not permitted, which points to a CP-layer being absent in these clauses, hence the inability to house the complementiser. The evidence from Dutch CPs is replicated in earlier stages of English, such as Middle English, where the complementiser is still present:

(93) a. Horn gan for to ride
          Horn began for to ride
          'Horn began to ride'

      b. Betere þe is freondscipe to hebben þene for to fihten
          Better to you is friendship to have than for to fight
          'It's better to have friendship than to fight'

(Brunner 1959 p91, attributed to Laȝamon)

The CP-status of controlled infinitivals will form the last of the desiderata that the current proposal will seek to incorporate:

(94) VII Our theory of control should explain why controlled clauses are CPs and not VPs or TPs.

The account to be developed will follow the analyses of Brame (1977) and Bresnan

(1978), by claiming that there is no PRO in the subject position of obligatorily

controlled clauses, but unlike Bresnan (1982), I will argue that this is also true of

non-obligatorily controlled clauses. I will also seek to avoid the conclusion that

controlled infinitivals are VPs. A precursor to this proposal is that of Evers (1988), in

which PRO is also dispensed with and the control relation is secured by appealing to

the external theta-role in the controlled clause. Both obligatory controlled infinitivals

and their non-obligatorily controlled counterparts are to be analysed as fully clausal

CPs; in fact their CP-status will fall out from the proposal developed here.

1.4.2 Desiderata for a theory of control

Looking at previous reductions of control has helped to decide on the desiderata for
the present proposal of control, which will incorporate insights and progress made
from existing theories. In this respect, I have set the following criteria that the present
theory of control will aim to meet. The properties of PRO remain elusive. A by-
product of the GB-era, PRO was conceived as an argument that could not receive
case, could not be governed, was both pronominal and anaphoric and only occurred in
control structures. It was designed for only one purpose and in this last respect, it
patterns with today's functional categories. On the basis of the ad hoc category that
PRO is, an optimal theory of control should do without it. But leaving PRO out of
control, should not leave us without an account for the data for which PRO was
introduced; the subject properties of the infinitival must not be lost. Thirdly, the

structural properties that obligatory control shares with other grammatical dependencies, such as movement and binding, should be incorporated into the system to be developed here. And that the understood subject in non-obligatory control must be interpreted as human, as opposed to that of obligatory control in which no such requirement is present, provides the fourth of the seven desiderata to be met in this proposal. The fifth desideratum will seek to provide an account for the similarities that the relations of binding and obligatory control share and the sixth requires an explanation for the absence of controlled objects. Finally, it would be an advantage if the CP-status of controlled infinitivals were a product of this system. Thus, we reach the following desiderata:

(95) I   Our theory of control should not rely on an ad hoc category such as PRO

II   Our theory should account for the subject properties of the infinitival.

III   Our theory should provide an account for why obligatory control is subject to four conditions, which non-obligatory control is not: its antecedent is obligatory, must be unique, local and must c-command its understood subject.

IV   Our theory should account for why the understood subject in non-obligatory control must be human.

V   Our theory should explain why anaphoric binding shares a substantial number of properties with obligatory control.

VI   Our theory should rule out controlled objects

VII   Our theory should explain why controlled clauses are CPs and not VPs or TPs.

Chapter 2

Obligatory Control

2.1 Introduction

2.1.1 PRO and Theta Theory

In the previous chapter it was suggested that a representation of obligatory control does not need to rely on PRO. We looked at a number of theories in which PRO was either absent, such as the LFG analysis of Bresnan (1978), or present, but not a contributor to the control relation, as in Borer (1989) and Landau (2000). In this chapter, I develop a syntactic representation of obligatory control that omits reference to PRO altogether. We will be concerned with the representation of the first two examples of chapter 1, repeated below in (1). The reader will recall that these examples contain an understood subject in the infinitival complement of the matrix verb. This understood subject shares its reference with a designated argument in the super-ordinate clause, either the subject, as in (1)a), or the object, as in (b).

(1)   a)   Bill$_i$ hoped PRO$_i$ to win

        b)   Bill ordered Ben$_i$ PRO$_i$ to dance

The argument to be developed within is such that the sentences above do not have a PRO projected in the subject position of the infinitival complements. Crucially, however, the infinitival verbs within these complements do introduce an external theta-role. As we will see, it is a property of this external theta-role that provides the

source for the subject properties apparent in these controlled complements, so as a first step towards achieving this rather different view of control, we will change the notation of the understood subject from that shown in example (1) to that of example (2). The Greek Θ-symbol signifies the presence of an external theta-role in the syntax. The matrix controller now shares its index with this theta-role, thereby anticipating the referential dependency that exists between these two elements:

(2)   a)   Bill$_i$ hoped Θ_i to win

        b)   Bill ordered Ben$_i$ Θ_i to dance

A representation of control such as this, in which theta-roles are given syntactic status, precludes a theory of argument structure along the lines of Hale and Keyser (1993), where rigid argument positions make theta-roles obsolete. But theta-roles as presupposed in the current work are purely syntactic constructs, in that syntax cannot distinguish between their differing interpretations. Thus there is no sense in which a semantic notion is having effect within the syntax. The theory of control to be developed is based on a theory in which grammatical dependencies are regulated by a system of upward copying comparable to that in Neeleman and van de Koot (2002). It is worth sketching out how such a system operates, before providing an outline of the theory that is to be developed within.

2.1.2 Percolation of selectional requirements

We can think of a grammatically dependent element as one that needs an antecedent of some kind. A verb requires a subject for example, a reflexive needs a binder and a secondary predicate must be predicated of something. Thus the verb, the reflexive and the secondary predicate have a syntactic requirement for an argument of the

relevant type, which raises the question as to how this need that the dependent element exhibits is to be represented. In mainstream minimalism the mechanism used is Agree (see Chomsky 1998, for example). Agree is the means by which uninterpretable features are checked against their interpretable counterparts. Thus the element with the uninterpretable feature is the probe, whereas the element with the interpretable feature is the goal. The probe attracts the goal. In the tree below, an uninterpretable feature on the functional head, F, makes F the probe and triggers Agree with the DP, a goal, in virtue of it housing the interpretable counterpart of the feature that F carries:

(3)

F (uF)

DP(iF)

Agree   T   VP

uF/iF = (un)interpretable feature
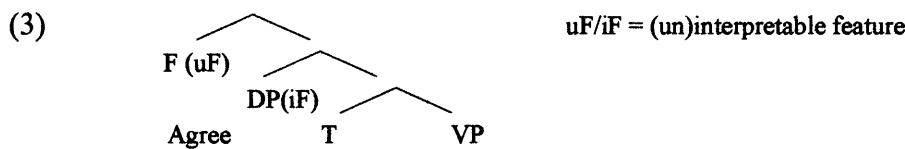
In such a framework we can anticipate quite large trees, in that for every feature introduced, so is a functional head in order to house said feature. The alternative method adopted here does not rely on this probe and goal mechanism. One of the consequences of this method is that trees will be smaller, because the functional heads necessary in an approach that regulates syntactic relations via agreement will not be required. The trade off will be that the information encoded on each node will be more complex. The framework that I will now introduce is that of Neeleman and van de Koot (2002) and depends on percolation rather than Agree.

In this framework the need that a dependent element exhibits is represented by the dependent element's introduction of a selectional requirement. In this way the requirement that the dependent element has is syntactically encoded by the element itself. This selectional requirement introduced into the tree percolates until it finds an antecedent with the properties that it requires. Let us say that when it reaches a node where it immediately dominates such an antecedent, its requirements have been met

and it percolates no further. In the example (5)a) below then, where 'G' is the dependent element and 'A' the antecedent, the selectional requirement (⊗) that 'G' introduces percolates to the root node because it is on this node that it is in a relation of immediate domination with the element that meets its specified need. Only on this node, then, is the selectional requirement satisfied (☺). Copying is a recursive upward relation, whereas its application (satisfaction) is a one-step downward relation, regulated by Accessibility:

(4)   *Accessibility*: Relations between nodes require immediate domination

Note that application of selectional requirements is not based on copying and does not therefore include any downward transmission of information onto a node. Application obtains when the selectional requirement is in a relation of immediate domination – Accessibility – with the sought after node, from where it can ascertain whether this node matches the property it seeks. Restricting such application to those instances in which the selectional requirement immediately dominates its antecedent imposes a very strict locality condition on each node; essentially it ensures that the properties of every node in a tree can be retraced to the properties of its daughters. Thus in (5)b), where again it is 'G' that introduces the selectional requirement, but this time it is 'J' which has the properties that could satisfy this requirement, percolation to the root node does not result in its satisfaction, since although the selectional requirement on 'B' dominates 'J', it does not immediately dominate 'J'. With copying being an upward relation only, the selectional requirement is essentially stranded without an antecedent:[1]

---

[1] Note that a feature cannot be copied up without interpreting what is copied as a property of that node. See the Neeleman and van de Koot 2002, for further detail.

(5)   a.

```
              B ☺
            /      \
         A          C ⊗
                  /      \
               D          E ⊗
                        /      \
                     G ⊗        H
```

b.

```
                     B ⊗
                   /      \
                A          C ⊗
              /    \      /      \
           J        K  D          E ⊗
                                /      \
                             G ⊗        H
```
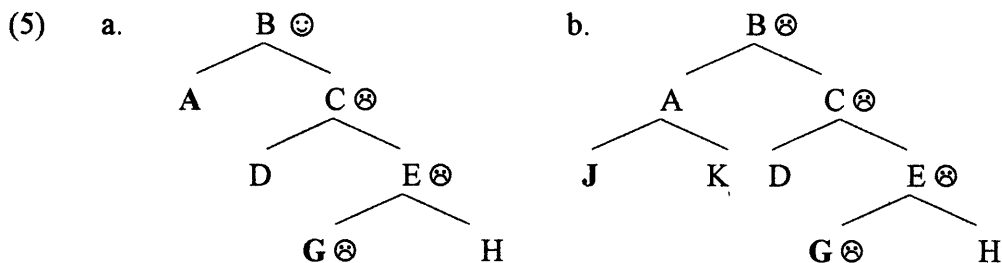
Let us now pin these abstract examples to a real syntactic relation, such as that between a verb and its arguments. A transitive verb requires two syntactic arguments and these selectional requirements of the verb are represented by the verb's introduction of an internal and external theta-role. These theta-roles percolate until reaching the mother node of the object- and subject-DP respectively, upon which they are satisfied. With the arguments of the verb saturated (indicated now by the #-symbol for expository purposes only), the theta-roles percolate no further:

(6)

```
              TP θ_#
            /       \
        DP            T' θ
        Ben         /      \
                  T          VP θ θ_#
                           /      \
                        V θ θ       DP
                         |           |
                    enjoyed θ θ   the party
```
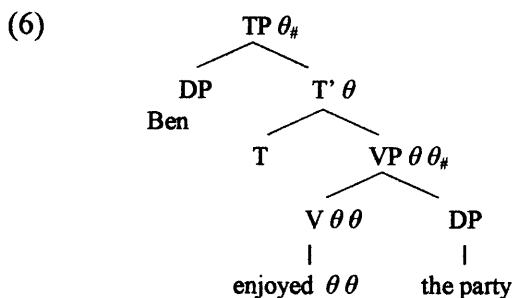
Another example of a grammatical dependency would be that between a local anaphor and its antecedent. An anaphor lacks referential properties itself, requiring an antecedent (a quantifier or referential category) that allows it to be interpreted. The lexical encoding of the variable of the anaphor is represented by the selectional requirement, say *B* for 'bind me', and through this mechanism the anaphor links to its

antecedent. *B* percolates from the anaphor that introduces it to an argument that provides the variable with a value:

(7)
```
              TP B#
            /      \
         DP        T' B
        Ben       /    \
                 T      VP B
                       /   \
                      V     DP B
                      |      |
                    likes  himself B
```
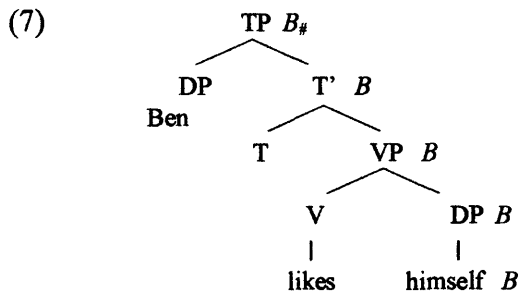
We can now turn to a concrete example for that in the tree in (5)b), where the selectional requirement could not be met because it failed to immediately dominate its antecedent. Example (8) demonstrates what this strict imposition achieves. As in (7), the reflexive introduces '*B*', which represents its need to be bound by an antecedent of a particular type and again, it is the DP *Ben* that meets this requirement. But on reaching the root node, '*B*' cannot be satisfied since the properties it seeks are not on a node that it immediately dominates:

(8)
```
                  TP B
               /        \
            DP            T' B
          /    \         /    \
       Ben      D' T    VP B
               /  \    /    \
              D   DP  V     DP B
              's sister |     |
                     likes  himself B
```
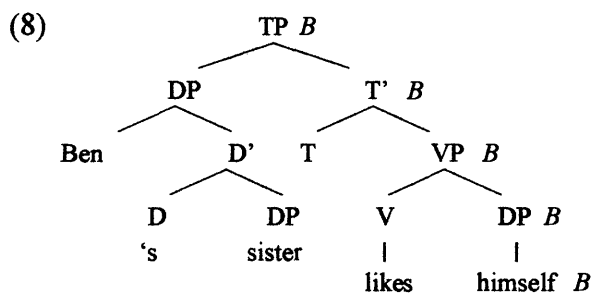
Failure of the selectional requirement to be satisfied is a desirable outcome, since the corresponding sentence is ungrammatical:

(9) *Ben$_1$'s sister likes himself$_1$

So upward copying, together with the restriction on application to immediate domination in (8) has the effect that when reflexives are not in a c-command relation with their antecedents, their selectional requirements are not met. (see Neeleman and van de Koot (2002) for a complete derivation of c-command within this system for all grammatical dependencies).

Note that internal and external dependencies are distinguished in this grammatical system via upward copying and satisfaction under immediate domination. The copying of categorial features amounts to projection: categorial features cannot be copied up without interpreting what is copied as a property of that node. And allowing satisfaction of selectional requirements under immediate domination only, ensures that internal dependencies remain internal. In contrast, external dependencies involve the copying of selectional requirements that are copied separately from categorial features, enabling them to pass the maximal projection of the head that introduces them. For further detail, I refer the reader to Neeleman and van de Koot, (2002), page 533.

The encoding of grammatical dependencies that I have introduced above belongs to a family of theories which use percolation, such as the HPSG framework of Pollard and Sag 1994 and also GPSG (see Gazdar et al, 1985). So there is no sense in which the theory of control introduced within is reliant on this particular framework.

But a crucial assumption on which this theory of control does depend is that theta-roles are complex objects, consisting of two components, namely *A* and *B*. These components, which I introduce in the immediate sub-section, but explore fully in section 2.2, constitute distinguishable selectional requirements. Each of these selectional requirements contribute to the syntactic relation formed between the

predicate from which their theta-role originates and the argument to which they are applied. It is together that these selectional requirements secure this relation.

2.1.3. Theta-role Components

Of the two components that make up a theta-role, component A is the component responsible for the formal licensing of arguments. Formal licensing, as we will see in this chapter and the next, is achieved via Case- or Subject-Verb-Agreement. Component B is a binding component, which regulates interpretation. This binding component is the very same component introduced for the binding of anaphors illustrated in example (7):

(10) A: Formal Licensing Component

  B: Interpretative Component

Thus, the full representation of a theta-role must comprise both these components, as in example (11) below.

(11) Θ-role = $[_\theta A, B]$

In most circumstances, A and B remain and are copied together, so their individual properties go unnoticed, but later, we will look at evidence for the independent thematic and syntactic status of these components. And under very restricted circumstances, even when A and B start out their syntactic lives together, i.e. as a theta-role, we will see that A and B operate independently from each other. Specifically, when B detaches from A and is copied in isolation beyond the infinitival clause to a node on which it immediate dominates an argument in the matrix, obligatory control is the result. This is sketched out in the tree in (12) below, which marries the percolation of selectional requirements to the theta-role dislocation

operative in obligatory control. Motivation will follow in the subsequent section; the tree below merely introduces the representation. The infinitive verb 'win' introduces a theta-role, [θ A, B], which is copied up. At CP, B detaches from A and continues up to the root node, on which it immediate dominates the matrix DP. Application of B to the matrix DP results in this DP being the interpreted subject of the infinitival clause:

(12)

```
            TP [Bₜ]
           /      \
        DP          T' [B]
        Bill       /     \
                  T        VP  [B]
                          /    \
                         V       CP [θA B]
                       hoped    /    \
                               C      TP [θA B]
                                     /     \
                                   T'  [θA B]
                                   /    \
                                  T       VP [θA B]
                                  to      win
```
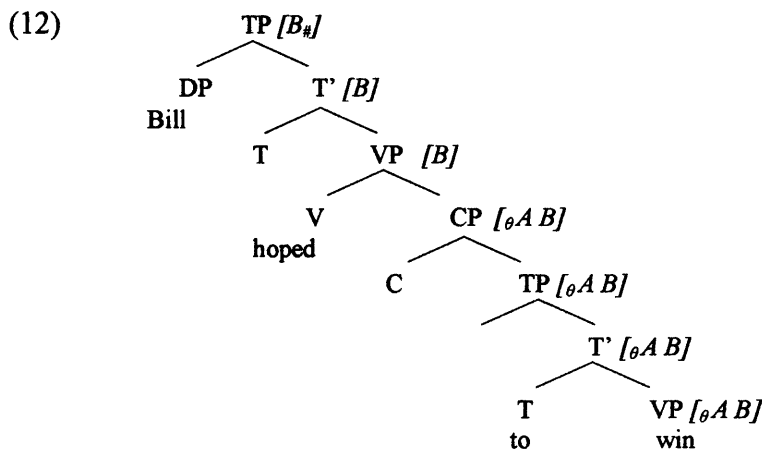
In LFG analyses, such as Bresnan (1978, 1982) and in Chierchia's (1984) seminal work on infinitives, there is also no subject in the controlled complement. The syntactic representation of control offered here is in line with the semantics for control offered in Chierchia (1984). Like Chierchia, but unlike Bresnan, I assume that the controlled complement is a CP. Indeed its CP status follows from the theory developed below. (see section 2.3).

The chief aim of this chapter is to map out a PRO-less approach to control. It will set up a system that can deal with English control cases, but will anticipate an extension to Icelandic in chapter 3, which on the surface suggests that ridding the grammar of PRO might be premature. The main proposal of a PRO-free representation of

obligatory control is set out in section 2.2. I start by clarifying what the distinguishable properties of the *A*- and *B*-components are and reformulate the Theta-Criterion using these components. In the next sub-section I turn to independent evidence for the decomposition of theta-roles. Samek-Lodovici (2003) is the focus of this section, which illustrates that the formal and the semantic properties of a verb can originate from different heads, thereby illustrating that thematic operations target different components within theta-roles. In section 2.2.3, I turn to syntactic evidence for an individual representation for these components. With corroboration for *A* and *B*'s individual contribution to both thematic and syntactic operations, I turn in section 2.2.4, to drawing a parallel between obligatory control and binding, which sets these relations apart from predication. The distinction drawn between predication on the one hand and obligatory control and binding on the other will anticipate the way in which the mechanism adopted here will regulate these relations. Specifically, the former relation will be regulated by *A* and *B* in unison, whereas the two latter relations are the reserve of *B*. I will then set the PRO-free representation of obligatory control adopted here, beside one which utilises PRO, which will make clear not only how the current approach differs from a PRO-based one, but also what it retains. The similarities this proposal has with a PRO-based account will ensure that the approach adopted here does not lose the generalisations for which PRO was invented. For regulation of this mechanism, I depend on the Elsewhere Principle (Kiparsky 1973), which will prevent the over-generation that would produce ungrammatical structures; separation of *B* from *A* will be restricted to the subject position of infinitival CPs, namely obligatory control environments. Section 2.3 returns to the evidence for PRO that was documented in chapter 1 and reanalyses this data using the PRO-less mechanism.

2.2 Obligatory Control without PRO

2.2.1 Theta-role decomposition

A main innovation of this thesis is that theta-roles are taken to be complex objects introduced by predicates and that the components comprising these complex objects have distinguishable properties. But the roles are purely syntactic, in that syntax cannot distinguish between their differing interpretations. The specific components are an argument-licensing component '*A*', which licenses argument positions, and a binding component '*B*', that regulates interpretation. I repeat these components below, before examining their properties:

(13)   *A*:   Formal Licensing Component

        B: Interpretative Component

B is a syntactic representation of the predicate's argument variable. Through *B*'s application, the argument variable representing the predicate's semantics receives a value. In (14), *B* is linked to the argument variable x and applied to the DP, with the result that the DP is interpreted as the argument of the verb:

(14)   TP [*B*]#
          ╱   ╲
       DP   T' [*B*]
    argument   ╱   ╲
              T   AP [*B*]
              | ↕
          predicate (x)
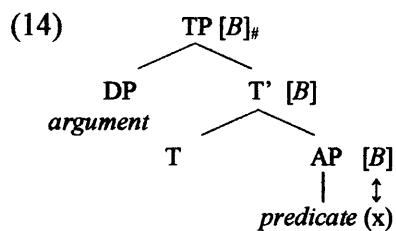
It is component *A* which ensures that the verb's adicity and the number of DP-arguments projected in the structure correspond. Its application to an argument

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morphologically marked as such licenses that argument position; marking is either case-marking on the category itself or via agreement with the verb (as will be explained later in chapter 3):

(15)   TP [*A*] #
           /   \
         DP   T' [*A*]
      argument   /   \
                 T   AP [*A*]
                        |
                    predicate
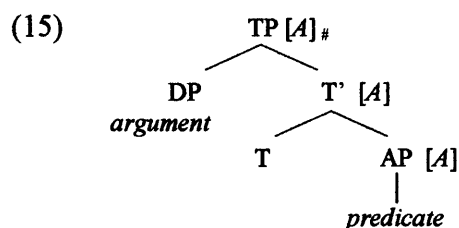
The examples in (14) and (15) have identified the contribution of each individual component to the subject-predicate relation, but it is their collective contribution that is required for the relation to be licensed in full. The tree in (16) below represents the complete picture, with the components operating in unison, in other words, theta-role assignment:

(16)   TP [θ*A,B*] #
           /   \
         DP   T' [θ*A,B*]
      argument   /   \
                 T   AP [θ*A,B*]
                        | ↕
                   predicate (x)
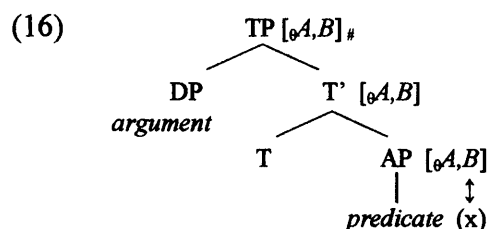
Perhaps, an immediate question that springs to mind is how the Theta-Criterion fits within this de-compositional analysis of theta-roles. In its original guise (see Chomsky 1981) the Theta-Criterion consists of two requirements, which say something like the following:

(17)   Θ-Criterion: (a)   Every argument must have one theta-role

                      (b)   Every theta-role must be assigned.

Let us look first at the initial part of the Theta-Criterion, which ensures that all arguments have a theta-role. If we were to transpose this part into the current analysis of theta-role de-composition, we would do so by using A, since in licensing argument positions, A regulates the number of arguments relative to the predicate:

(18)   Every projected argument must satisfy one A

The second part of the Theta-Criterion, which demands that all theta-roles be discharged, relates to B, since demanding that all a verb's theta-roles be discharged is a demand on that verb's semantic arguments to be expressed. If we were to make application of this interpretative component obligatory, it would ensure that all the argument variables of a predicate become specified:

(19)   Every B must be satisfied by an argument

But note that (19) is no more than a restatement of Principle A of the Binding Theory, which in its broadest sense states that all anaphoric expressions must be bound locally:

(20)   Principle A: An anaphor must be locally bound

Given its duplicity, (19) need not be stated separately, leaving the reformulated Theta-Criterion as below:

(21)   Θ-Criterion: Every argument must satisfy one A

A theta-role decomposition analysis such as has been introduced here makes it possible to distinguish two key components that   contribute   to   argument-hood, namely interpretation and case. It is the interpretation of the infinitival subject that is relevant to the control relation, not its case, and as this chapter unfolds, we will see how theta-role decomposition allows us to represent this. The next two sections, however, will focus on evidence for such decomposition in the first place. First, I look at Samek-Lodovici (2003) from which the idea for theta-role decomposition came. Notably, Samek-Lodovici's evidence for theta-role decomposition comes from an entirely different construction from control, namely the Italian light-verb construction. This construction will show that A and B are separately targeted in thematic operations. In the subsequent section I turn to corroboration for these theta-role components' independence at the syntactic level.

2.2.2 Independent Evidence for Theta-Role De-composition

A non-atomic approach to theta-roles is independently motivated in Samek-Lodovici (2003), who develops a way of explicitly representing the correspondence between elements at Argument Structure and those at Lexical Conceptual Structure. Chiefly, what this work illustrates is that the formal and the semantic properties of a verb can originate from different heads, the implications of which for present purposes is that A and B must exist independently, and that there is a heuristic value in making this existence explicit. Given that the theory of control to be developed within depends on theta-role decomposition, it is worth spending some time on the construction that Samek-Lodovici introduces such theta-role decomposition for. But the reader acquainted with the detail of this paper can skip to section 2.2.3, where I focus on constructions in English in which A and B's independent existence at the syntactic level can be detected.

Samek-Lodovici splits theta-roles into two components. I will identify these components first and then translate them straight into the language of the current framework. The building of the Italian light verb construction that follows will adhere in the main to the mechanism used in that of Samek-Lodovici (2003), but it will use the terminology of the present proposal in the interests of clarity. Nothing else hinges on this though. The theta-role components in Samek-Lodovici are represented by variables (x,y) and indices that accompany these variables (x_i ,y_j). The variables express the predicate's adicity, whilst the subscripts determine that argument's interpretation. At a purely descriptive level, we can see in example (22) that only the subscripts are represented at both the level of Argument Structure and at the level of Lexical Conceptual Structure. Let us turn straight to an example to illustrate what these components correspond with. The example in (22) shows Samek-Lodovici's representation of transitive verb *freeze*.

(22) a. AS: freeze (x_j (y_k))

   b. LCS: CAUSE (W_j,(BECOME (Z_k, ICE)))

(Samek-Lodovici's (2))

At the level of Argument Structure (22)a), the transitive verb's two arguments are represented by the two variables, x and y, as well as their accompanying subscripts, j and k respectively. The variables express the predicate's adicity, whilst the subscripts determine that argument's interpretation. The same subscripts accompany the Lexical Conceptual Structure variables in (22)b), which ensures constancy in thematic interpretation between these two levels. If we were to translate the variables and subscripts of Samek-Lodovici into the language of the present framework, the variables would correspond to the A-components and the subscripts to the B-components:

(23) (x,y..) and (A, A...) = Formal Licensing Components

(i,j..) and (B, B...) = Interpretative Components

The correspondence between the level of Argument Structure and Lexical Conceptual Structure for transitive *freeze* using A and B would be represented as in example (24).

(24) a.   AS: freeze ([$_\theta A$,B]   ([$_\theta A$,B]))

             | |

      b.   LCS: CAUSE (W,(BECOME (Z ICE)))

The theta-roles at the level of Argument Structure (24)a comprise A and B. The As correspond to the x and y variables of example (22), and the Bs to the subscripts j and k. Thus the As regulate argument number, whilst the Bs govern interpretation. Rather than duplicating the Bs at the level of Lexical Conceptual Structure, I posit a link between the Bs at the level of Argument Structure and the semantic variables (W and Z) at the level of Lexical Conceptual Structure. This direct linking is merely an alternative to duplication, having the same effect, namely of ensuring constancy in interpretation between the two levels. [2]

Support for the independent representations of these theta-role components comes from a construction whose make-up indicates that thematic operations single out one of the sub-components, namely the Italian light-verb, which is formed from a verb and a verb nominal. Essentially, Samek-Lodovici traces the make-up of these verbs to different sources: whereas the light-verb's adicity is determined by the verb from which the light-verb is derived, its interpretation comes from the verb-nominal with which the verb is combined. An example will clarify. These constructions comprise a verb and a verb-nominal, both of which have different interpretations. The resulting

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[2] This rendition does not represent the linking from LCS to AS in a more economical way than Samek-Lodovici, a task not tackled here.

light-verb takes on the meaning of the verb-nominal, not the verb, whose original interpretation is lost. So in the light-verb construction below, the di-transitive verb *dare (to give)* combines with the verb-nominal *una lavata* (a washing) and the resulting light-verb means 'to wash' as opposed 'to give a washing to...' as might be supposed. That the di-transitive verb does not inherit its meaning from its verbal component, namely *dare* (to give) is evident from the fact that the verb-nominal *lavata* (a washing) cannot be interpreted as the direct object of *dare*:

(25)   Dare una lavata alle camicie

to.give a washing to.the shirts

'To wash the shirts'

(Samek-Lodovici's 3)

We will now look at the thematic operations necessary to derive the light-verb's meaning. The thematic operations invoked are based largely on Samek-Lodovici (2002), with some slight modifications and applied directly to the A- and B-components, rather than Samek-Lodovici's variables and indices.

Let us look first at the verbal component of what will ultimately become the light-verb. The verb *dare* is di-transitive and hence introduces three theta-roles, all of which are complexes, comprising A and B:

(26)   dare: $\{_\theta A,B\}$ $\{_\theta A,B\}$ $\{_\theta A,B\}$

The first thematic operation, call it *erasure*, targets the B components only, erasing them all. But the A components are left in tact, which means that the number of arguments introduced by the verb is held constant, that is its adicity is unchanged:

(27) dare *{A,B {A,B {A,B}}}* → dare~light~ *{A{A{A}}}*

Now let us turn to the second component of the (ultimate) light-verb, namely the verb-nominal. The verb-nominal is transitive, consisting of two theta-roles, again each comprising A and B. The same operation (*erasure*) now targets the formal components of the verb-nominal, namely the A components, this time bypassing the Bs. By targeting the components that regulate argument number, rather than those concerned with interpretation, the operation does not interfere with the verb-nominal's meaning:

(28) lavata *{A,B {A,B}}* → lavata *{B{B}}*

The next operation brings together the verb with the verb-nominal to derive the light-verb. This operation, *combine*, joins the verb's As, as in example (27) with the verb-nominal's Bs, as in example (28), resulting in the light-verb, which inherits the verb-nominal's meaning. The light-verb's number of arguments is exactly one less than that of the original verb. This is because the final A component of the verb *dare* is applied to the verb nominal, its complement, as the two combine:

(29) dare~light~ *{A{A{A}}}* + lavata *{B{B}}* → dare una lavata *{A,B{A,B}}*

By showing that thematic operations distinguish and target a theta-role's sub-components, Samek-Lodovici illustrates that the formal and semantic properties of a verb can originate from different heads, the implications of which for present purposes is that A and B can exist independently. Details of and further corroboration for the original analysis can be found in Samek-Lodovici (2003); the above examples serve only to motivate independently a non-atomic approach to theta–roles. But having seen this at the thematic level, we now need to look at motivation for their individual representations at the syntactic level, since this is the level at which the

current theory of obligatory control is aimed. I turn in the next section to examples that might qualify as such.

2.2.3 Independence of A and B

In the previous section, we saw that the components that make up a theta-role must be visible to thematic operations, since they are targeted individually when building Italian light-verbs, for example. Granted the possibility of A and B's dislocation at the thematic level, the next question I would like to address is whether A and B can be introduced into the syntax separately from one another and if so what kind of lexical items might introduce them. In fact, we have already seen B in action on its own, so we will attend to B first.

B is an interpretative component, so the type of element that would introduce it is one that is syntactically dependent on an antecedent which will provide the variable with a value. We saw earlier in example (7) that a reflexive fits this description; it cannot be interpreted in the absence of an antecedent, yet it is not a predicate. Dependent as the reflexive is, it will play no role in licensing its antecedent, since there is no sense in which the antecedent requires anything from the reflexive. As we can see from (30)b), without a locally agreeing antecedent, the reflexive is unlicensed, yet its antecedent can occur in the structure with or without the reflexive, as (c) demonstrates.

(30)   a)   Ben$_i$ likes himself$_i$

       b)   *Ben$_i$ said that Betty likes himself$_i$

       c)   Ben likes Bill

The reflexive can only introduce B, since introduction of A and B together constitutes introduction of a theta-role, forcing a predicative usage. Repeating example (7) then, binding between the reflexive and its antecedent is established when B is discharged from the DP's mother node:

(31)

```
              TP [B]#
           ╱        ╲
        DP            T' [B]
        Ben         ╱      ╲
                  T          VP [B]
                           ╱      ╲
                         V          D [B]
                         │          │
                       likes      himself
```
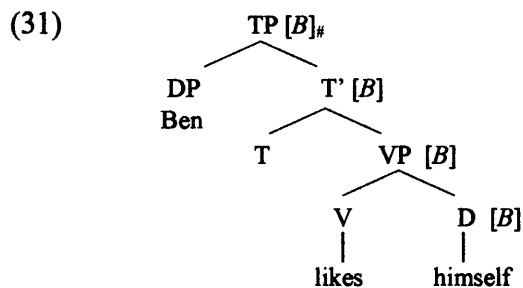
Of course there are occasions when reflexives are used predicatively, such as in *Bill isn't himself today*, in which case it will introduce both A and B, namely a complete theta-role:

(32)

```
            TP
         ╱      ╲
      DP          T'
      Bill      ╱    ╲
             T         NegP
             is      ╱      ╲
                   Neg        VP [A,B]#
                   n't      ╱      ╲
                         t_Bill     VP [A,B]
                                  ╱      ╲
                                V [A,B]    today
                              ╱      ╲
                           t_is       DP
                                    himself [A,B]
```
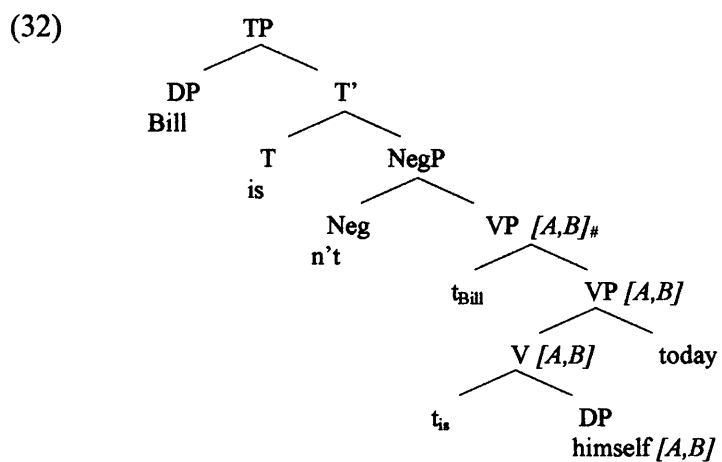
Note that when the A- and B-components do not separate, it is necessarily the case that the subject of the predicate is also its binder:

(33)   * Bill$_i$ didn't consider Ben himself$_i$ today

    $\neq$ Bill didn't think that Ben was Bill

This restriction makes sense under the present proposal, which links the binding requirement to the theta-role itself (see (13) above).

Having looked at an example of B's independent syntactic effects, we can turn now to the A-component. An example of where A might be introduced alone is by 'weather' verbs. The expletives of 'weather' verbs seem to have different properties from those of real expletives; whereas the former are selected by the verb, introduction of the latter are triggered by a structural requirement. A look at the German examples below will illustrate. German is a V2 language, which requires its first position to be filled. Theta-less expletives fulfill this function. In (34)a, the expletive is obligatory, but in (34)b, where the structural condition that requires a filled spec-CP has been met by the time adverbial, the expletive is no longer possible:

(34) a.   Es wurde getanzt   a'   *Wurde getanzt
           There was danced   Was danced
           'There was dancing'

      b.   *Gestern wurde es getanzt b'   Gestern wurde getanzt
           Yesterday was there danced   Yesterday was danced
                                           'There was dancing yesterday'

This is not so for the expletives of weather verbs, which, as the examples in (35)b show, remain obligatory regardless of the adverbial in spec-CP:

(35) a.   Es hat Gestern geregnet   a'.   *Hat Gestern geregnet
            It had yesterday rained   Had yesterday rained
            'It rained yesterday'

      b.   Gestern hat es geregnet   b'   *Gestern hat geregnet
            Yesterday had it rained   Yesterday had rained
            'It had rained yesterday'

On the basis of such a distinction, weather expletives are described as recipients of a pseudo theta-role, devoid of semantic import in Chomsky (1986). This pseudo theta-role might actually be an A-component. Their being recipients of an A-component only, makes sense, since despite being formally licensed arguments, weather expletives bear no semantic relation to their verb; there is no sense in which 'it' can literally snow.[34]

To sum up briefly what the aim of this section has been: Theta-roles have been argued to be composite elements, consisting of two selectional requirements, A and B. A licenses argument positions whereas B ensures interpretative correspondence between the verb and its argument. Their independence has been demonstrated using anaphoric binding, regulated by B, and the semi-argument status of weather-verb expletives receives some account if they only satisfy an A. The next sub-section introduces constraints operative on the percolation of theta-role components, with a view to drawing a distinction between predication on the one hand and binding and obligatory control on the other. The locality constraint on predication will be shown

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[3] It has been suggested that these quasi-arguments can control:

1)   It$_i$ sometimes rains after PRO$_i$ snowing   (Chomsky 1981, p324)

That this is control is not crystal clear, but if the weather verbs 'snow' and 'rain' both introduce an A, the identification (see section 2.5.1) of these components, and subsequent assignment to the expletive would not cause a problem semantically, since 'it' cannot snow or rain.

[4] Note that it is the fact that A-components are not linked to the semantics that allows them to go unsatisfied.

to be tighter than that on binding and obligatory control, a distinction reflected in this system by regulating predication via *A* and *B* in unison and the latter two relations by *B* alone.

2. 2. 4 Predication vs. Obligatory Control and Anaphoric Binding.

One of the desiderata with which chapter one concluded was that of retaining the distinction between obligatory control and other syntactic dependencies, whilst incorporating the similarity between obligatory control and anaphoric binding (desideratum V). It was argued, for example, that a theory in which all grammatical dependencies reduce to Agree masks the distinctions between these dependencies. This section keeps this desideratum in mind; it will show that predication is subject to stricter locality restraint than that of obligatory control and binding and that by appealing to theta-role components we can reflect the differences they show in this respect and thus go some way in arriving at this desideratum.

Let us take predication first. The examples in (36) demonstrate that predication cannot cross clause boundaries, whether that clause is finite, as in (a) or infinitival, as in (b).

(36) a) * I said today [cp that John met Mary nude yesterday]

b) * I persuaded John [cp to meet Mary nude in Trafalgar square][5]

This locality constraint might be reflected in the present system of theta-role percolation by a ban on complete theta-roles percolating beyond CP:

---

[5] - where it is John and Mary who are meeting in Trafalgar square. All but one of the speakers I checked with agreed with this judgement (n=7). Presumably this particular person is able to extra-pose PPs from inside the embedded clause to the matrix clause.

(37) CP blocks theta-role percolation

But let us look at anaphoric relations, too, because this will lead us to reformulate
(37), in that it will become clear that what CP blocks is only one of the components
that make up a theta-role rather than the whole complex. Unlike predication,
anaphoric relations can be established across infinitival CPs:

(38) a.   I arranged for myself to win

      b.   John arranged for himself to win

That these are anaphors, rather than logophors, is supported by the following
examples, which distinguish anaphors from pronouns. The former require a local
antecedent, as in example (39)a), whereas the latter ban them, as in (b):

(39) a.   *John arranged for myself to win
      b.   *I arranged for me to win

Logophors pattern with pronouns in their distribution (see Pollard and Sag 1994 and
Reinhart and Reuland 1993) and, as we can see from (40), can do without an
antecedent altogether.

(40) a.   Everyone enjoyed the talk except myself.
      b.   Everyone enjoyed the talk except me.

We saw earlier (see (31)), that a reflexive only introduces the binding requirement B.
In this system of percolation, the cross-CP binding of the reflexives in example (38)
must mean that B can percolate freely beyond infinitival CP:

(41)   CP does not block percolation of B

But this leaves us with a contradiction, since *B* constitutes part of a theta-role and the ungrammaticality of cross-CP predication as in example (36), was attributed to CP acting as a ban on theta-role percolation, as in (37), repeated below:

(37)   CP blocks theta-role percolation

But appealing to a theta-role's sub-components allows us to narrow down the problem with the predication examples in (36) to the *A* component of the theta-role, since we have seen in example (38) that *B*'s can cross CPs. Thus, (37) can be reformulated as in (42) below without losing the generalisations for either the predication or the binding examples:

(42)   CP blocks percolation of *A*.

Now what of obligatory control? Similar to the reflexives in (38), the obligatory control relation also crosses a CP-boundary:

(43)   a)   John arranged [$_{CP}$ for himself to win]
        b)   John arranged [$_{CP}$ to win]

The binding of reflexives and obligatory control share other important properties, as was saw in Chapter one, where some of the arguments produced in Koster 1986 and Manzini 1983 were documented. And the present proposal follows these authors in grouping obligatory control with anaphoric binding. So both (43)a) and (43)b) are examples of binding. In (a), the anaphoric link holds between the reflexive in the infinitival and the argument in the super-ordinate clause, whereas in (b), the

anaphoric link is between the external theta-role of the infinitival verb and the argument in the super-ordinate clause. The crucial difference between these two examples lies with B's origin. In (a) the reflexive introduces B, but in (b), the B-component comes from the infinitival verb's external theta-role. But in both examples B percolates beyond the CP boundary to the matrix argument which specifies its reference.

Translating a PRO-based approach to obligatory control into the current mechanism of percolation makes a direct comparison between these two approaches possible. Within this system, PRO would introduce a B-component in virtue of its anaphoric character (see Manzini 1983, Koster 1986 and Landau 2000, in which PRO is analysed as an anaphor) and this B-component would percolate to its controller in the matrix clause (44)a). The PRO-free representation will make very similar predictions to that of a PRO-based one, since their thematic 'paths' within TP are the same. In both trees in (44), the path of the controlled verb's external theta-role is identical up to T-bar. In (a), the theta-role is satisfied by PRO, the subject of the embedded clause. The B-component that PRO introduces in virtue it being an anaphor is copied to the root node, where it immediately dominates the matrix DP, thereby establishing the shared reference between these two elements. In this representation, PRO is the source of the anaphoric nature of the infinitival clause. Now let us turn to (b). The controlled verb's external theta-role percolates until CP, where it divides and B is copied in isolation to the matrix TP. B's application to the matrix DP establishes the interpretive link between this DP and the infinitival clause and it is this subcomponent, rather than PRO, that provides the source for anaphoric nature of the infinitival clause:

(44) (a) TP $B_{\#}$ (b)   TP $B_{\#}$

```
        TP B#                           TP B#
       /    \                          /    \
     DP      T' B                    DP      T' B
            /    \                          /    \
           T      VP B                     T      VP B
                 /    \                          /    \
                V      CP B                      V      CP [A,B]
                      /    \                           /    \
                     C      TP B [A,B]#                C      TP [A,B]
                          /    \                             /    \
                       PRO B    T' [A,B]                          T' [A,B]
                               /    \                            /    \
                              T      VP [A,B]                   T      VP [A,B]
                                    /  \                              /  \
                                  V [A,B]                           V [A,B]
```
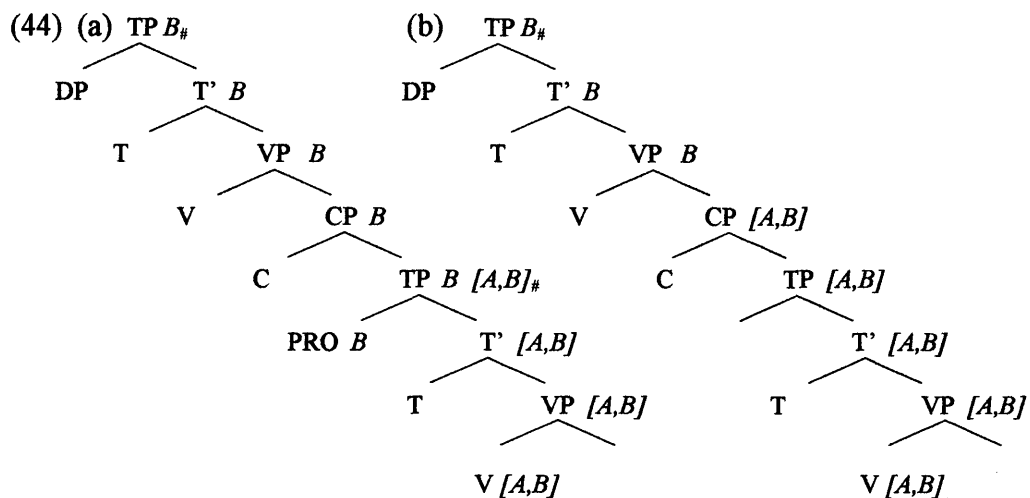
In both trees, a thematic path is created between the infinitival verb and TP, and in both instances, the path between the infinitival clause and the matrix DP is one of binding:

(45)

```
        DP        Binding
                      CP
                            Theta-role percolation
                                  VP
```
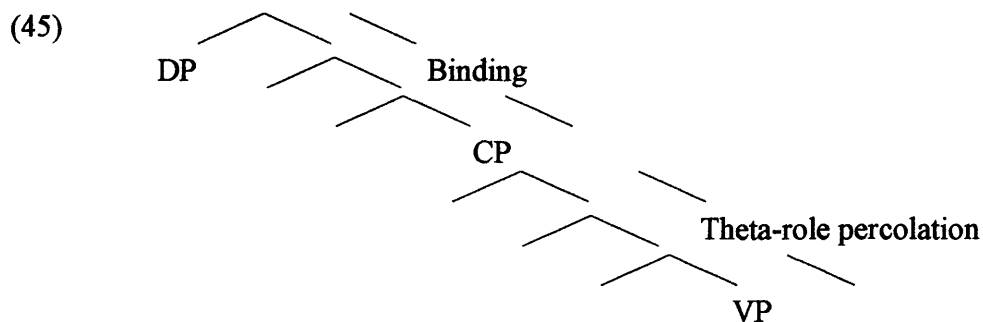
The crucial difference between them is that in (44)b the subject properties of the infinitival clause are reinterpreted in terms of the activity of the verb's external theta-role, as opposed to an empty subject in that clause. And the binding properties of obligatory control are an outcome of the separation of B from A, which forges an

interpretative link between *B* and the referential DP, the characteristic feature of anaphoric relations.

We can end this section by noting that an appeal to theta-role components, which has been independently motivated in a construction orthogonal to control (Samek-Lodovici (2003), has helped us toward three of the desiderata set out in chapter one. Reinterpreting PRO in terms of the activity of the external theta-role complex, will enable us to retain the subject properties of the infinitival (Desideratum II) without depending on the ill-defined category that PRO is (Desideratum I). On the basis of the tighter locality restriction that predication exhibits, relative to obligatory control, the analysis of theta-role decomposition has enabled us to represent the difference between these two relations by regulating the former relation through theta-role percolation and assignment and the latter relation by percolation of a theta-role sub-component, namely the interpretative component, *B*. Thus, the difference these two grammatical relations exhibit in this respect is explicitly incorporated into the mechanism adopted here. The similarities obligatory control has shares anaphoric binding in respect to locality is represented in this system by regulating the binding relation between a lexical anaphor and its antecedent via the interpretative component, *B*, too (Desideratum V) . The copying of this interpretative component of a theta-role must of course be restricted, a task we turn to in the next sub-section.

2.2.5 Regulating theta-role decomposition.

The percolation of isolated selectional requirements needs to be regulated, so as to restrict separation of *B* from *A* to very limited environments. In short, we wish to restrict its occurrence to obligatory control environments. To provide this restriction, I rely on the Elsewhere Principle (see Kiparsky 1973), a well established principle

which gives precedence to a more specific rule over a more general one. The context for predication is more restricted than that for anaphoric binding, since, as we have seen in (36) and (38) the former relation cannot be established across any CPs, whilst the latter can. Couched in terms of the current analysis of theta-roles, percolation of a complete theta-role is a more specific operation than percolation of B alone. A formulation of the Elsewhere Principle as below will ensure that priority is given to the narrower context, namely that of whole theta-role percolation:

(46)   Given two competing rules, R1 and R2, which operate in two domains of application, D^1 and D^2, such that the D^1 forms a sub-set of D^2, then R1 will block R2 from applying in D^1.

Rule 1 refers to percolation of a complete theta-role and Rule 2 refers to percolation of B alone. Domain^1 refers to conditions that hold of predication and Domain^2 to conditions that hold of obligatory control. Put in to practice, this means that when complete theta-role percolation is possible, as in predication, it will take precedence over the percolation of B alone and therefore prevent percolation of B from occurring. Copying of B in isolation will be possible, however, in circumstances in which complete theta-role percolation is barred, namely across infinitival CPs. In this way, copying of B in isolation (binding) is limited to occurring in exactly the environments we wish it to, namely obligatorily controlled CP complements.

With the workings of *Elsewhere* in place, we can return to the obligatory control sentence in (43)b) and see the rule in operation. The infinitive verb's external θ-role percolates to CP. Here, by *Elsewhere*, as formulated in (46), B is allowed to separate from A and percolate to its antecedent in the matrix clause:[6]

---

[6] What is not a syntactic decision is the choice between object- and subject-control with double-object verbs, such as *persuade* in the matrix clause. Examples with NPs (taken from Koster (1986), but

(47)   TP *[B]#*

```
            TP [B]#
           /    \
        DP      T' [B]
        John    /   \
              T      VP [B]
                    /    \
                   V      CP [A,B]
                arranged  /    \
                        C      TP [A,B]
                              /    \
                           T'  [A,B]
                           /    \
                          T      VP [A,B]
                          to     win
```

- *Elsewhere* allows separation, since the whole theta-role is barred from crossing CP.
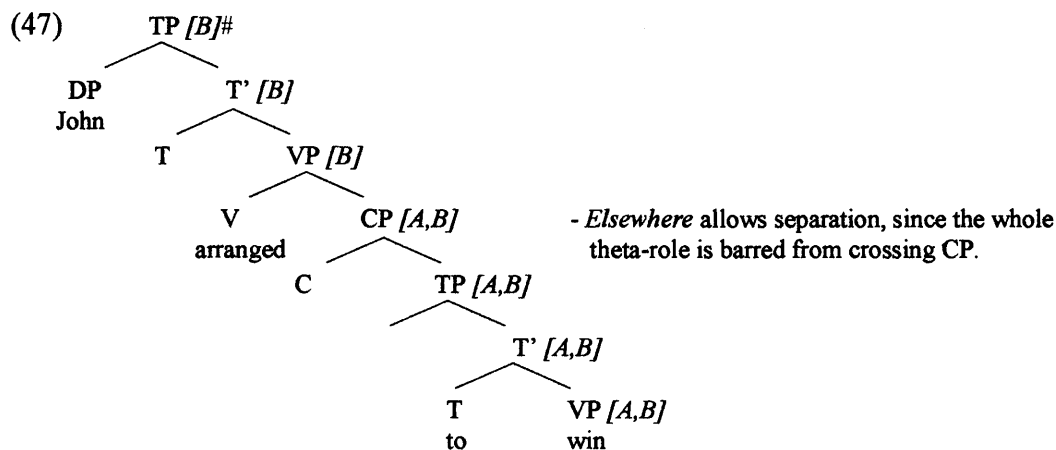
Up until this point, we have abstracted away from the fact that *B*'s separation from *A* leaves *A* unsatisfied, a situation which without regulation could lead to the generation of unattested structures, such as controlled objects:

(48)   *John said that Mary$_i$ likes θ_i

This is an important issue and one I return to in the last but one section of this chapter.

Thus far this section has used *Elsewhere* (Kiparksy 1973) to regulate percolation, making it unnecesary to introduce any new conditions specifically for this purpose. Appealing to *Elsewhere* has enabled us to restrict theta-role separation to CPs:

---

attributed to Postal 1969) show that a controller can either be inferred from an adjective (a), placed in a PP (b), or left implicit (c):

(a)   the American attempt to attack Cuba at night
(b)   the attempt by America to attack Cuba at night
(c)   the attempt to attack Cuba at night   (Koster's 19b, 20a & 20b)

Attempts to derive the above from conditions on structure seem misplaced. Rather, a semantic restriction on the control verb/noun identifying the controller is necessary. See Rooryck 2000 for a fully worked out proposal.

Desideratum VII. The next section applies this PRO-less system of theta-role decomposition to the data introduced in chapter one, for which PRO was deemed necessary, namely those with reflexives, secondary predicates, and floating quantifiers in infinitival clauses.

2.3. Evidence for PRO

2.3.1 The Use of PRO

In chapter one, we saw that reflexives, secondary predicates and floating quantifiers in tensed clauses all adhere strictly to Principle A, which requires them to be bound by an argument locally in their binding domain:

(49)   a.   *Bill_1 said [that Betty likes himself_1]

       b.   *Ben_1 said [that Bill died drunk_1]

       c.   *The boys_1 said [that Bill should all_1 learn the lines]

For locality to be a universal property of reflexives, secondary predicates and floating quantifiers, their felicity in infinitival clauses requires something extra to be said about them, since infinitivals do not house any argument that could act as a local antecedent:

(50)   a.   Bill persuaded Ben [to enjoy himself]

b. Ben persuaded Bill [to dance naked]

c. The teachers urged the pupils [to all learn their lines]

Without recourse to an argument in the subject position of each infinitival, their locality property cannot be maintained as was, but a caveat must be introduced, such that locality only holds in finite clauses or that locality is defined differently in non-finite clauses to that in finite clauses. In (50)a), for example, one might hypothesise that the whole clause constitutes the binding domain of the reflexive. But aside from the conceptual messiness inherent to the introduction of such an exception, this will not achieve the desired end because it does not explain why the antecedent must be the matrix object, rather than the subject:

(51) [Bill persuaded Ben [to enjoy himself]]

Enter PRO. With the introduction of a null-subject, Principle A can be held constant, since the binding domain is the infinitival clause and the accessible subject that binds the reflexive is PRO. And as we saw in chapter one, the semantic antecedent can be restricted to the matrix object, since whatever controls PRO is also interpretatively linked to the reflexive, it being bound by PRO:

(52) [Bill persuaded Ben [PRO to enjoy himself]]

The same solution generalises to secondary predicates and floating quantifiers in infinitivals. The depictive is predicated of whatever controls PRO, again in this case, the matrix object, as in (53), and the obligatory co-reference between *all* and *the pupils* in (54), falls out from PRO being controlled by the matrix object:

(53) Ben persuaded Bill$_1$ [PRO$_1$ to dance naked]

(54) The teachers urged the pupils$_1$ [PRO$_1$ to all learn their lines]

But what we gain in keeping locality conditions constant, we lose in our reliance on this ill-defined element. PRO is of course a GB-construct and one might argue, therefore, that the question of its existence is outdated, since the framework in which it was introduced has been superceded by minimalism. But interestingly one of the most recent theories of control, namely that of Landau (2000) retains PRO despite this theory being placed firmly in a minimalist setting. So the answer to the question of whether or not we can explain the data above without recourse to PRO remains significant.

In the next section, I turn to this task. I start by examining the properties of DPs, which have a requirement for case and for a theta-role. Making the distinction between these rather different requirements explicit aids towards a better understanding of what it is that makes a DP an antecedent. In short, it will be argued that it is the theta-role assigned to a DP that acts as an antecedent to dependent elements. This will be shown for secondary predication, following Higginbotham (1985), for the binding of reflexives, by leaning on Williams (1994) and for the binding of floating quantifiers, by using an analysis in Janke and Neeleman (2005). We will see that with theta-role decomposition granted, the PRO-free approach can cater for the examples in (52), (53) and (54), which given PRO's ad hoc nature, seems a step in the right direction.

2.3.2 Argument properties

Secondary predicates, reflexives and floating quantifiers are sensitive to the argument/adjunct distinction. DP-subjects can all act as antecedents for these elements, whereas adjuncts cannot. But the properties that characterise arguments are distributed between their position, which is one in which case is assigned, and the fact that they are associated with a theta-role. It will be claimed here, following arguments made in Higginbotham (1985), Williams (1994), Janke and Neeleman (2005), that it is the latter of these two argument properties, namely the theta-role, which these phenomena are sensitive to. More specifically, they are bound by another theta-role. All of these properties have to do with one type of relation, namely identification; that is identification of some selectional requirement with a theta-role or a theta-role component. Let us look at identification in isolation first, before setting it into the context of secondary predication.

Theta-roles have been defined here as purely syntactic objects; this means that they are visible to and engage in syntactic operations, but the syntax makes no distinction between them. All else being equal, therefore, two theta-roles that meet on a node through percolation will be indisinguisable and as such will collapse, that is identify, effectively becoming one composed role:

(55) θ

      θ θ
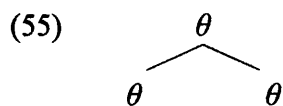
Higginbotham (1985) introduces this view of theta-roles, which has been applied to secondary predication by Neeleman and van de Koot (2002) The theta-role of a secondary predicate is identified with a theta-role of a matrix verb, before assignment to an argument. So in a sentence such as, *the students attended the lecture drunk*, the

result is such that the same argument can be predicated of both the main verb and the secondary predicate, without tampering with the Theta-Criterion:

(56)

```
                 TP θ#
                /    \
             DP        T' θ
        the students  /   \
                    T       VP θ
                    ed     /   \
                        V' θ θ#    AP θ
                       /    \       drunk
                    V θ       DP
                  attend-   the lecture
```

- *identification of main verb's external role and secondary predicate's only role.*
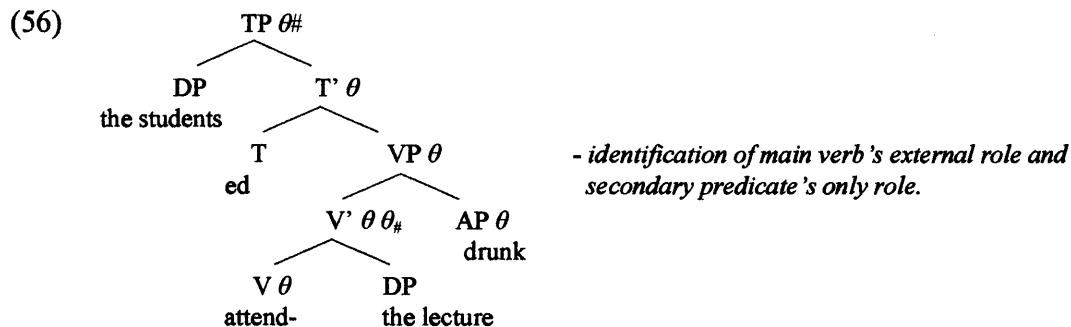
The external theta-role of the verb and that of the depictive identify on VP, becoming one. This composed theta-role is then applied to the subject, enabling it to act as an argument for both the verb and the secondary predicate. In effect, the theta-role of the main verb is the antecedent of the secondary predicate, rather than the DP to which the theta-role is ultimately applied. The very same argument is made in Williams (1994) with regard to reflexives, to which we turn next.

In Williams (1994), argument-hood is addressed in relation to binding. In this work the antecedent of a reflexive is deemed to be the theta-role itself as opposed to a DP and binding theory is conceived as the set of rules that regulates relations between theta-roles. It is the theta-roles that have reference, whereas as the DPs to which these theta-roles are assigned impose conditions on the reference of their theta-roles. An illustration is provided in the tree below, where it is the theta-role that is linked to the anaphor, indicated by the index for expository purposes only:

(57)

```
            TP θ_i#
           /    \
        DP        T' θi
        Ben      /    \
               T        VP θ_i θ_#
                       /    \
                  V θ_i θ     DP
                    |          |
                blamed θ_i θ   himself_i
```
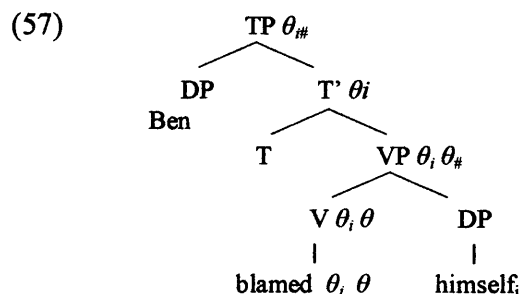
Given that this theta-role is usually assigned to the antecedent, the distinction is a subtle one and masked in most environments. But there is evidence that this is a more accurate account. For one example, see (58) below, which shows that Condition B operates on unassigned theta-roles. The unassigned external theta-role of the noun *admiration* cannot corefer with the internal role assigned to the pronoun *him*:

(58)   Admiration of him

        (admirer ≠ admiree)   (Williams' (2), p208)

Floating quantifiers also have anaphoric properties (see Belletti 1982) in that they, like reflexives, depend on a c-commanding argument for their reference. Janke and Neeleman (2005) categorise floating quantifiers as anaphoric adverbials. In this analysis floating quantifiers are regulated by two conditions. The first is that they must left-attach to a verbal category and the second is that they be bound by an unassigned theta-role in a local c-commanding node:

(59)   A floating quantifier must: (1)   left-attach to a verbal category

                          and (2)   be bound by an unassigned theta-role

                                       in a c-commanding node

We can plug this straight in to an example, which will clarify: In the sentence *the boys both read the same book* the floating quantifier *both* is bound by the verb's

external theta-role as it percolates up to the T'-node, where it is applied to the subject. The floating quantifier is interpretively associated with the DP satisfying the theta-role that binds it as in (60). For advantages of this approach see Janke and Neeleman (2005).

(60)
```
              TP θ_#
             /    \
          DP       T' θ_i
                  /   \
                 T     VP θ_i
                      /    \
                   FQ_i     VP θ_i θ_#
                           /    \
                        Vθθ      DP
```
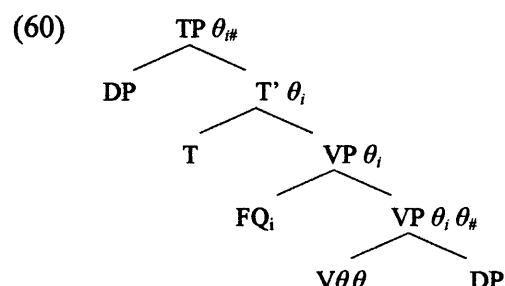
The analysis just sketched rules out the examples in (61). Despite being hierarchically identical to the structure depicted in (60), the construction (61)a is ungrammatical because *both* follows the category to which it is attached, contra (1) in (59) and (61)b is ruled out as interpretively, the floating quantifier can only be bound by the verb's internal theta-role. But since this theta-role is assigned before the floating quantifier is merged, it does not percolate to a node that c-commands floating quantifier, contra (2) in (59):

(61)   a.   *[TP The boys [VP [VP read the same book] both]].

       b.   *[TP I [VP both [VP met the boys]]].

The analysis of theta-role identification based upon Higginbotham (1985) and applied to secondary predicates, as in Neeleman and van de Koot (2002), reflexives in Williams (1994) and floating quantifiers in Janke and Neeleman (2005) all share the fact that it is the theta-role applied to the argument that is the antecedent of the respective element, whatever else their differences.

(62)

θ_i

Depictive$_i$
Reflexive$_i$
Floating Quantifier$_i$
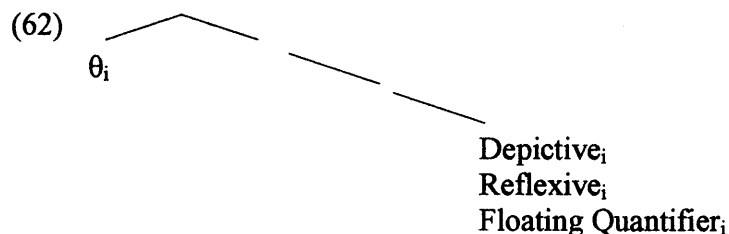
I now reanalyse the data in (51) to (54), incorporating the above works. In each instance it will be the theta-role assigned to the DP, as opposed to the case position that the DP occupies, which acts as the respective element's licenser.

2.3.3 Secondary Predicates and PRO

To analyse secondary predication using the present framework, we will marry Higginbotham's (1985) notion of identification with theta-role decomposition. Essentially this mean that identification will be able to target the component parts of a theta-role not just the whole theta-role complex. That is, the meeting on a node of isolated theta-roles (63)a), of their component parts, as in (b) and (c), or of a complete theta-role and a sub-component, as in (d), will result in identification of those elements, and their effectively collapsing into one:

(63)   (a) *[A,B]*   (b) *[B]*   (c) *[A]*   (d) *[A,B]*

   [A,B]   *[A,B]*   *[B]*   *[B]*   *[A]*   *[A]*   *[A,B]*   *[B]*
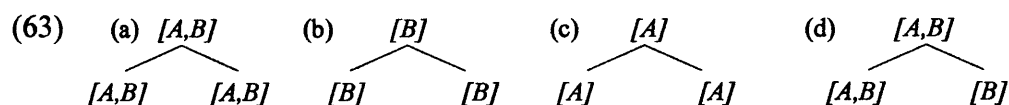
Let us now use identification possibilities that are an outcome of theta-role decomposition by turning to secondary predicates in infinitivals. At this stage, I remind the reader of the original example and its problem, namely that the example requires a PRO-subject in order to reconcile it with the locality of predication:

(64)   Ben persuaded Bill [PRO to dance PRO naked]

A PRO-free representation proceeds as follows. In the tree in (65), the embedded verb merges with the secondary predicate and their unassigned theta-roles are identified on VP, as permitted by (63)a. This composed theta-role continues till CP, where *A*'s barring from CP, permits *B*, under regulation from *Elsewhere* (see (46)), to continue in isolation. Note that despite not being represented in the tree, the actual representation is more complex. At the matrix V-bar, *B* identifies with the *B*-component of the θ-role of the matrix control verb, *persuade* (see (63)b), which is applied to the matrix object, with the result that this object is predicated of both the embedded verb and the depictive:

(65)   TP
```
            TP
           /  \
        Ben     T'
               /  \
             T'     VP
             -d    /  \
                  V    VP [B]#
              persuade / \
                     Bill  V' [B]
                          /  \
                         V    CP [B] -      * [CP θ] therefore Elsewhere allows
                      tpersuade / \                 B to detach from A.
                             C    TP [A,B]
                                  /  \
                                T' [A,B]
                                /  \
                               T    VP [A,B] - identification
                                   /  \
                                  V    AP
                             dance [A,B]  naked [A,B]
```
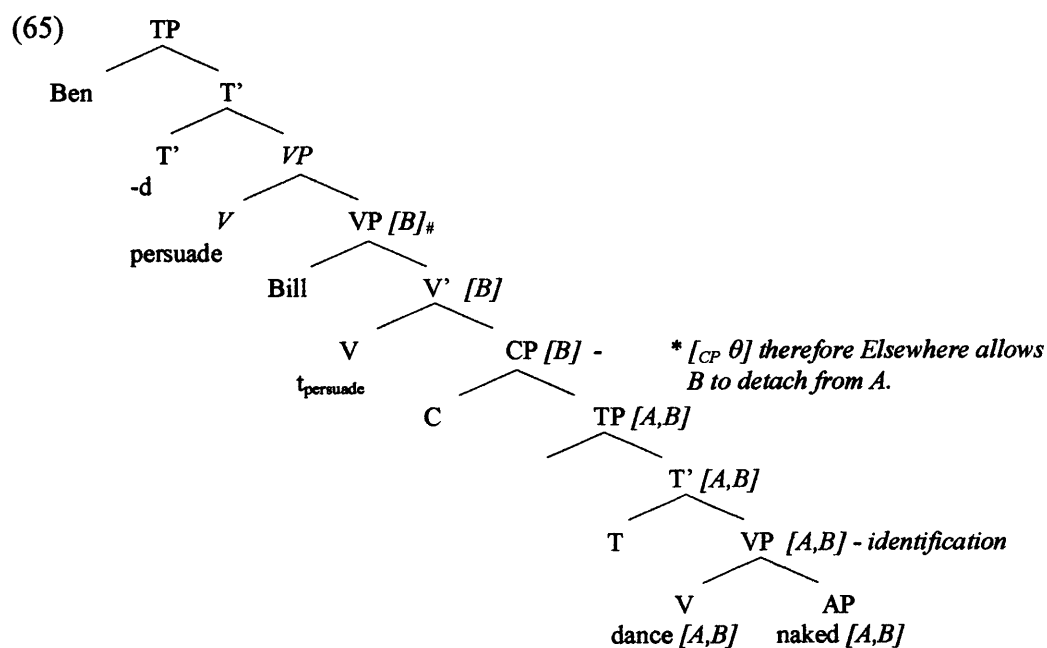
With this representation complete, I turn straight to a PRO-free analysis of infinitivals with reflexives.

2.3.4 Reflexives and PRO

Representation of reflexives in infinitivals (66), does not depend on PRO either. As demonstrated in (31), repeated for convenience below, the reflexives are interpretively linked to their antecedents via their introduction of B.

(31)

$$\text{TP } [A,B]_\#$$

```
              TP [A,B]#
            /        \
          DP          T' [A,B]
          Ben        /    \
                    T      VP [A,B] [A,B]#
                          /    \
                    V[A,B] [A,B]  DP [B]
                         |          |
                       likes     himself
```
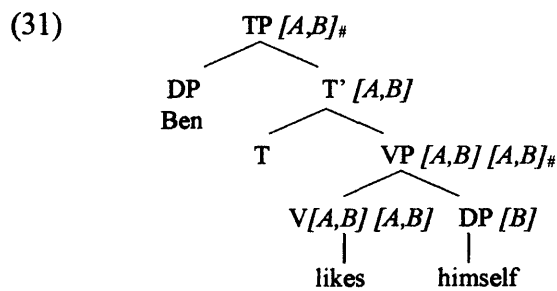
Binding between the reflexive and its antecedent is established when the B introduced by the reflexive identifies with the B-component of the verb's external theta-role in virtue of (63)d) and this composed role is discharged from the DP's mother node. Exactly the same analysis is given to reflexives in infinitivals:

103

(66)

```
        TP
       /  \
    Bill   T'
          /  \
        T'    VP
        -d   /  \
            V    VP [B]#
         persuade /  \
                Ben   V' [B]
                     /  \
                    V    CP [B]      – Elsewhere: B detaches from A
                  t_persuade /  \
                            C    TP [A,B]
                                /  \
                             T' [A,B]
                             /  \
                            T    VP [A,B]  - identification
                                /  \
                               V    DP
                          enjoy [A,B]  himself [B]
```
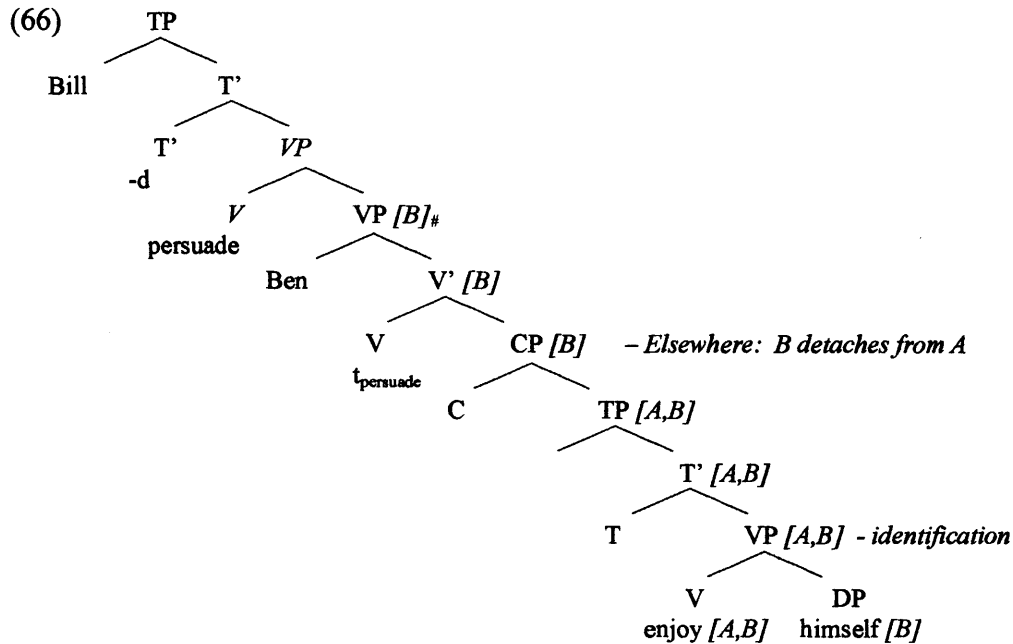
In the tree above, the reflexive's *B*-component is bound by the external theta-role of the infinitive verb, *enjoy*. By (63)d these two identify on VP, and this composed role percolates to CP. But at this boundary, the whole theta-role cannot continue and *Elsewhere* kicks in, allowing detachment of *B* from *A*. At V-bar *B* identifies with the internal theta-role of the matrix verb, *persuade*, (by (63)d) and subsequent assignment of this theta-role to the object ensures that it is construed as the semantic subject of the infinitival clause as well as being interpretively linked to the reflexive. Again for ease of exposition, only the identification within the embedded clause has been shown.

2.3.5 Floating Quantifiers and PRO

Finally I return to the locality conditions of floating quantifiers in infinitivals:

(67)   The teachers urged the pupils$_i$ [PRO$_i$ to all$_i$ learn their lines]

As in Janke and Neeleman (2005), floating quantifiers are analysed as anaphoric adverbials that must left-attach to a verbal category. For motivation that floating quantifiers must be left-attached in English, I refer the reader to the paper itself. In any theory adverbs must be specified as to whether they must left- or right-attach to the host category (although, the technical implementation may take a different form, for example in LCA-based frameworks). In English there exists no single context in which the adverbial use of 'both' can right-attach to its host category. Their being anaphoric means that this must be represented by a selectional requirement that they introduce, as was the case for reflexives. The selectional requirement must be a B-component, which represents the floating quantifier's need to be bound. This *B*-component must be bound by an unassigned theta-role. More specifically, *B* will identify with the infinitive verb's external theta-role on VP. At CP, with whole theta-role percolation being barred across this boundary, *Elsewhere* permits *B* to percolate on to the unassigned internal theta-role of the matrix verb, with which it is identified.[7] Assignment of this theta-role to the matrix object secures the interpretive linking of the floating quantifier with the matrix object DP:

---

[7] Once again, for ease of exposition, this second step of identification is not represented in the tree.

(68)　TP

The teachers　T'

　　　T　　VP
　　-d

　　　V　　VP *[B]*#
　　urge

　　　the pupils　　V' *[B]*

　　　　V　　　CP *[B]*　　− *detachment of B from A*
　　　t~~urge~~

　　　　　C　　　TP *[A,B]*

　　　　　　　T' *[A,B]*

　　　　　to　　　T' *[A,B]* − *point of identification*

　　　　　　FQ *[B]*　　VP *[A,B]*
　　　　　　all　　learn their lines
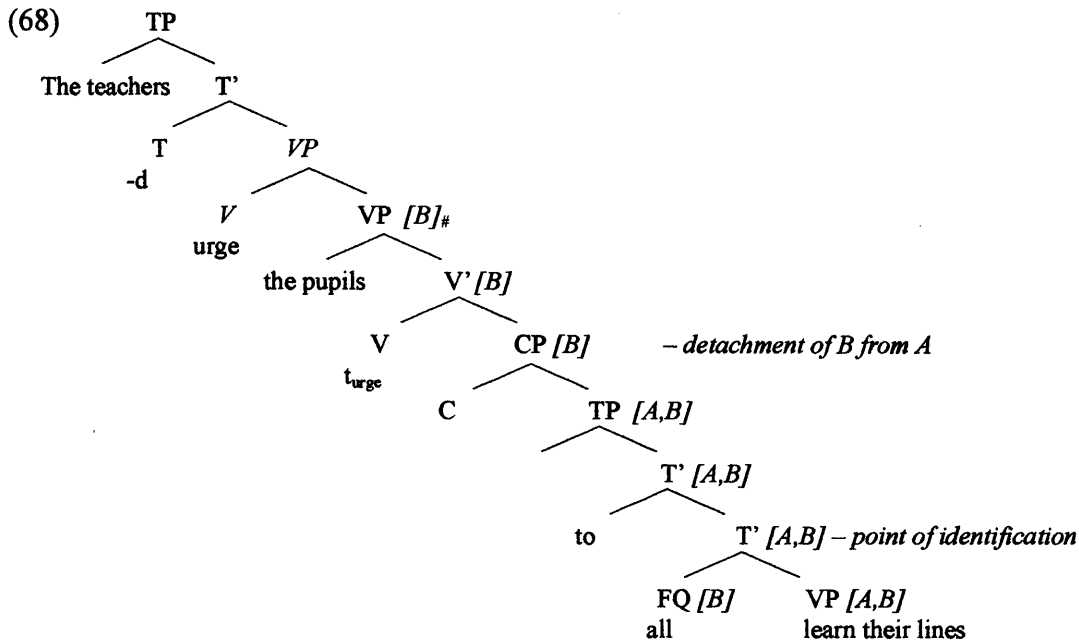
Providing a representation of these constructions without a null-subject has demonstrated that we can adopt this mechanism without losing the generalisations for which PRO was introduced, Desideratum III, yet we can lose PRO, Desideratum VI.

I return in the final section to a potential problem raised in section 2.2.4, namely that of controlled objects.

2.4　Ruling out Controlled Objects

Up until this point, we have abstracted away from the fact that in virtue of *B*'s separation from *A* at CP, *A* is left unsatisfied in the infinitival, a situation which

without with out regulation could lead to the generation of unattested structures, such as controlled objects:[8]

(69)   *Bill said that Betty$_i$ likes θ_i

Theta-role identification and the possibility of A and B separation make the above construction potentially derivable in the following way. The embedded transitive verb introduces two theta-roles. The external theta-role percolates to TP, where it is discharged to the subject-DP. The circumstance that needs to be prevented concerns the internal theta-role. The B-component of the internal theta-role might detach itself from A, identify with the B-component of the external theta-role (by (63)d) above), with the result that *Betty* is interpreted as both subject and object:

(70)

```
            TP
          /    \
        DP      T'
        Bill   /   \
             T'     VP
                   /   \
                  V     CP
                 said  /  \
                      C    TP [A,B]#
                     that  /   \
                         DP     VP [A,B] [A]
                        Betty_i  /   \
                              V[A,B] [A,B]
                               likes
```
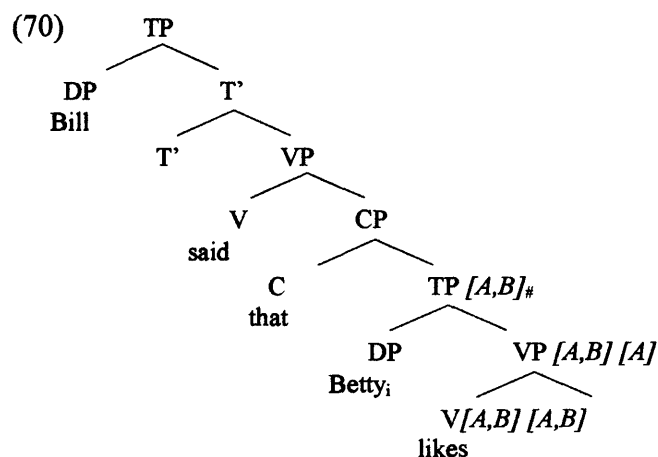
But this problem is avoided from the formulation of *Elsewhere* in (46), repeated below:

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[8] The notation in this example indicates that what needs to be ruled out is a representation such that the verb introduces two theta-roles, but no object of any kind projects, leaving the internal theta-role unassigned.

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(46)   Given two competing rules, R1 and R2, which operate in two domains of application, D^1 and D^2, such that the D^1 forms a sub-set of D^2, then R1 will block R2 from applying in D^1.

Elsewhere has a bias for keeping *A* and *B* together, since the process of copying *A* and *B* together is more specific, in that more information is copied, than one in which *B* is copied alone. Let us pin the rule that copies the complex *[A,B]* and the rule that copies the sub-component *[B]* straight to those rules of the *Elsewhere* principle to make this clear. Rule 1 of *Elsewhere* refers to the copying of the complex, *[A,B]*, since carrying more information, it is the more specific rule, which means that Rule 2 of *Elsewhere* refers to the copying of *B* alone. So we start with a bias for keeping the complex together, *[A,B]*; Rule 1 will only give way to Rule 2 if it is blocked from applying in its domain. But there is nothing to block Rule 1, since *like* being a transitive verb can assign accusative case. This availability of accusative case ensures that the *[A,B]* complex will be copied and assigned without separation:

(71)   a.   * John said that Mary$_i$ likes θ_i

       b.   John said that Mary likes herself

Note that the availability of case that prevents controlled objects is not available for controlled subjects, hence the impossible:

(72)   *John$_i$ hoped he$_i$/him$_i$ to win the game

This lack of case then, will mean that theta-role decomposition will always be warranted for obligatory control structures. Deriving obligatory control's distribution via case-availability has become unpopular (see especially Landau (to appear)), chiefly because of data from morphologically rich languages such as Icelandic, which have provided evidence for a case-marked PRO (Sigurðsson 1991, 2003). But

Icelandic can be accounted for without PRO, as we will see in chapter three, thereby removing it as an obstacle to a case-centred explanation.

But another reason for the unpopularity of deriving the distribution of PRO from case-availability is the existence of languages that allow overt subjects in infinitivals. Carnie and Harley (1997), for example, show that the licensing of an overt subject in Irish in non-finite clauses depends on a clause-internal mechanism: they can stand alone, so are not limited to sub-categorial positions, are not dependent on an overt C, nor are they licensed via ECM. The authors argue that the distribution of PRO is governed by the EPP, thus making two predictions:

(73)   (i)   Languages demonstrating no EPP effects will allow overt nominals in the subject position of infinitivals

       (ii)   PRO is case-marked

Prediction (i) is discredited by German and Dutch. German subject positions do not need to be obligatorily filled, showing no EPP effects:

(74)   Gestern wurde getanzt
       Yesterday was danced
       'There was dancing yesterday'

German should, therefore, allow overt nominals in subject positions of infinitivals, contrary to fact. Prediction (ii) is supported by Carnie and Harley using Icelandic

case-concord data. But chapter three is dedicated to answering for case-concord without PRO.[9]

A remaining issue, however, is Lasnik's (1992) observation that we noted in chapter one? Recall that a case-based theory of PRO's distribution was rejected because of examples in which despite case being unavailable, PRO remained impossible. I repeat the relevant examples below.

The contrast between the two examples in (75) has been attributed to case: the transitive verb assigns case obligatorily, but the argument runs (Chomsky and Lasnik (1993)) that PRO can only receive null case, hence the ungrammatical example in (b).

(75) a.   John believes himself to be clever

      b.   *John believes PRO to be clever

The matrix verb exceptionally case marks the subject of its complement, which permits the reflexive in the subject position of the complement, not PRO. But the next set of examples proved this explanation fell short, since an intervening adverbial which prevents accusative case assignment and hence the possibility of the reflexive, does not save PRO:

(76) a.   *John believes sincerely himself to be clever

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[9] Szabolcsi (2005) introduces a possible overt subject in Hungarian infinitivals. The title of this paper, however, is rather telling: *Overt infinitival subjects (if that's what they are)*.

(1)   Nem szeretnék [én is elcsúszni]
       Not would.like(1sg) [I(N) too slip(inf)]
       'I wouldn't like it to be the case that I, too, slip'. Szabolcsi's (5)

Szabolcsi herself suggests that these pronouns are not subjects, hence not arguments. Given that the structure of this example remains unclear, it is not a strong counterargument to the claim that overt subjects in obligatorily controlled infinitivals are not possible.

b.   *John believes sincerely PRO to be clever

(Lasnik's 11 & 12)

The explanation for the ungrammaticality of the example in (76)b) is different to that for the absence of a controlled object in (71)a) and has to do with the category of the verb in (76)b), which crucially is not a control verb. In chapter four, where I elaborate on the syntactic selection involved in obligatory control that is absent in non-obligatory control, I will return once more to this example and we will see that it does not threaten the case-centred explanation for the absence of controlled object

3.4   Summary

In this chapter, I have applied a system based on theta-percolation, with theta-roles understood as composites, to obligatory control. It has been extended to the binding of secondary predicates, reflexives and floating quantifiers in infinitivals, removing the need for PRO to act as protection for the locality condition that regulates them (Desideratum I and II) The fact that obligatory control is analysed as a syntactic dependency ensures that it will adhere to the properties of the configurational matrix, since these properties pervade all grammatical dependencies (Desideratum III). In each case the mechanism used has been the interpretative component B, which is copied beyond the infinitival to a theta-role introduced by the matrix verb. Theta-role decomposition has enabled us to distinguish obligatory control and binding on the one hand from both NP-raising and predication on the other; the former two relations are regulated by the component of a theta-role that is sent to the semantic interface only, namely B, the latter two by a complete theta-role (Desideratum V) The distribution of obligatory control has been derived using *Elsewhere* and an appeal to case. The Elsewhere Principle and case-availability has ruled out the unwanted

generation of controlled objects (Desideratum VI). Lastly, *Elsewhere* has restricted theta-role separation, i.e. obligatory control to CPs (Desideratum VII):

(77) I ☺ Our theory of control should not rely on an ad hoc category such as PRO

II ☺ Our theory should account for the subject properties of the infinitival.

III ☺ Our theory should provide an account for why obligatory control is subject to four conditions, which non-obligatory control is not: its antecedent is obligatory, must be unique, local and must c-command its understood subject.

IV Our theory should account for why the understood subject in non-obligatory control must be human.

V ☺ Our theory should explain why anaphoric binding shares a substantial number of properties with obligatory control.

VI ☺ Our theory should rule out controlled objects

VII ☺ Our theory should explain why controlled clauses are CPs and not VPs or TPs.

Chapter 3

Case and Agreement in Icelandic

3.1 Introduction

The chief aim of this chapter is to use the PRO-less approach to obligatory control
mapped out in the previous chapter on Icelandic, which on the surface suggests that
ridding the grammar of PRO might be premature. Icelandic has a class of quirky
verbs/predicates, which determine the case on their subjects, whilst manifesting
themselves an obligatory default form:

(1)   a. Strákunum er kalt   a'. *Strákunum eru kalt

          Boys.the(Dpl) is(dflt[1]) cold(dflt)   Boys.the(Dpl) are(3pl) cold(dflt)

          b. Henni var hjálpað   b' *Hún var hjálpað

           She(Dsg) was helped   She(Nsg) was helped

The predicate *kalt*, in its quirky guise as in (1)a) takes a dative subject, whereas the
predicate itself and the main verb show no agreement with this subject, manifesting
an obligatory default form. This is particularly clear in (a'), where despite the plural
subject, the copular connecting the subject with the predicate cannot agree in number.

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[1] Default on main verbs in Icelandic is 3rd person singular.

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In (b), the passive participle *help* also takes a dative subject obligatorily, as is clear from (b'), in which a nominative subject rules the sentence out.[2]

When a quirky verb appears in an infinitival clause, (i.e. the passive participle *help* below, which takes a dative subject), in combination with a regular (non-quirky) secondary predicate, that secondary predicate strongly prefers to agree in case with the would-be subject of the quirky verb:[3]

(2)   Ekki hafði ég vonast til að vera hjálpað drukkinni/??drukkin

      Not had $I_{(N)}$ hoped for to be helped$_{(dflt)}$ drunk$_{(Dfsg)/??(Nfsg)}$

      'I had definitely not hoped to be helped drunk'

Given the agreement that surfaces on the secondary predicate, an immediate question is whether a quirky case-marked PRO is necessary to explain these agreement restrictions. With a case-marked PRO, the origins of the dative agreement on the secondary predicate can obviously be accounted for (see esp. Sigurðsson 1991, 2002). In an example like (2), the secondary predicate would simply agree with its null subject:

(3)   Ekki hafði ég vonast til að PRO vera hjálpað drukkinni

      Not had $I_{(N)}$ hoped for to PRO$_{(D)}$ be helped$_{(dflt)}$ drunk$_{(Dfsg)}$

The pattern of agreement in examples similar to (3) has been regarded as strong evidence for the existence of PRO, convincing even those who have denied its existence for many years (see especially Hudson 2003), that PRO must exist after all. But the Icelandic data receive a natural account under an approach based on theta-role

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[2] See Zaenen, Maling and Thráinnson (1985) for extensive evidence that the surface subjects of quirky verbs behave syntactically as subjects, as opposed to raised objects.

[3] Example constructed with the help of Gunnar Hrafn Hrafnbjargarson (pc)

decomposition. In fact, if adopted, some unwanted complications accompanying a PRO-based analysis are avoided.

In this chapter, I will examine Icelandic and its morphological evidence that is widely accepted as a motivation for PRO. The case and agreement system in this language is such that in finite clauses, adjectives, participles, secondary and semi-predicates and floating quantifiers inflect for case and phi-features, showing agreement with their antecedent. There has been some dispute as to what provides the source for agreement on these elements when in infinitivals, there being no overt subject with which they can agree. If the representation in (3) is correct and there is a case-marked PRO in this position, capable of bearing any case that an overt DP bears, the agreement on the elements in question loses its mysteriousness. But the fact that PRO does not block wanna contraction, patterning with non-case-marked elements such as NP-trace in this respect, rather than case-marked elements such as wh-trace (see Jaeggli 1980, Berendsen 1986, Hornstein 1999, 2000) casts doubt on this analysis. Equally, it remains unexplained as to why this subject cannot be overt. Conversely, if there is no PRO in that position, contraction is expected to be unhindered, there being nothing to intervene, and a lack of case will account for the prohibition on overt DPs. But this brings us back to the agreement facts, the focus of this chapter.

A look at the case and agreement properties of Icelandic follows, which will force a divide between non-syntactic and syntactic agreement. The former, to which we turn in section 3.2, refers to phi-feature agreement. Justification for a non-syntactic treatment of this data comes chiefly from their presence when there is no syntactic source. An extra-syntactic rule is proposed to cover this agreement pattern, which bars elements that identify a subject from clashing with that subject. In section 3.3, I turn to syntactic agreement, drawing a distinction between that exhibited by quirky and non-quirky verbs. Syntactic agreement refers to the licensing of arguments,

which, it will be argued in section 3.4, (following an idea dating back to Jakobson 1935/66) is achieved in one of two ways: case on the subject or agreement on the main verb. Quirky case phenomena fall out from this assumption in that when a subject has quirky case, its main verb lacks agreement, taking a default form instead. A specific syntactic rule regulates quirky case, tying quirky case to theta-role assignment. Giving precedence to this more specific syntactic rule and using the mechanism mapped out in the previous chapter, makes it possible an account of all Icelandic agreement in infinitivals without any recourse to PRO; a task taken on in section 3.5. The PRO-free mechanism is applied to the Icelandic data, illustrating that PRO is not necessary to accommodate them. In section 3.6, I take the Icelandic question a step further, by asking whether Icelandic in fact provides evidence against PRO. A comparison with the PRO-based approach adopted in Sigurðsson (2002) suggests that it is does. I conclude in section 3.7.

3.2 Non-syntactic Agreement

3.2.1 Phi-feature Agreement

In Icelandic a regular (non-quirky) adjective agrees with the argument it qualifies, in both case and phi-features. This is demonstrated in the examples below, where the adjective agrees with its neuter, feminine or masculine antecedent, in (4)a), (b) and (c) respectively:

(4)   a.   Ég tel börnin falleg
          I consider the children(Anpl) beautiful(Anpl)

      b.   Ég tel stelpurnar fallegar

I consider the girls(Afpl) beautiful(Afpl)

c.   Ég tel strákana fallega

I consider the boys(Ampl) beautiful(Ampl)

Phi-agreement is not clause bounded in the way that case-agreement sometimes is:

(5)   [Mig vantaði bara [að vera hjálpað drukkinni/*drukkna af foreldrum mínum]]

Me$_{(A1sg)}$ lacked only to be helped$_{(dflt)}$ drunk$_{(Dfsg/*Afsg)}$ by parents mine

'All that I needed was to be helped drunk by my parents'

In the example above, the secondary predicate *drunk* has dative, feminine and singular morphology. There cannot be one syntactic source for these features, given the rather different restrictions that regulate them, as we will see. The number feature on *drunk* matches that of the matrix subject, both being in the singular. But the feminine feature on *drunk* cannot derive from the matrix subject too, given that the first person pronoun bears no gender feature. This is also true of the predicate's case-agreement, given that accusative agreement, which would match the matrix quirky subject, is barred. On the basis of the example in (5) alone then, it seems as though number has a syntactic source, albeit a non-local one, whereas gender is regulated outside of syntax. In fact, there is evidence to suggest that both number and gender features are regulated extra-syntactically, as these next examples of non-obligatory control demonstrate:

(6)   a.   Að vera **fundinn drukkinn** er hræðilegt, að vera **fundinn nakinn**

er ekki svo slæmt.

To be found$_{(N.m.sg)}$ drunk$_{(N.m.sg)}$ is horrible, to be found$_{(Nmsg)}$ naked$_{(Nmsg)}$ is not so bad.

b.   Að vera **fundin drukkin** er hræðilegt, að vera **fundin nakin**

er ekki svo slæmt.

To be found$_{(N.f.sg)}$ drunk$_{(N.f.sg)}$ is horrible, to be found$_{(Nfsg)}$ naked$_{(Nfsg)}$
is not so bad.

c.   Að vera **fundnar drukknar** er hræðilegt, að vera **fundnar naktar**

er ekki svo slæmt.

To be found$_{(N.f.pl)}$ drunk$_{(N.f.pl)}$ is horrible, to be found$_{(Nfpl)}$ naked$_{(Nfpl)}$
is not so bad.

Spoken by a male, the sentence in (6), would require the agreement in (a), but with a female it must be as in (b). Lastly, if a group of females recite the same sentence the agreement alters to (c). In each instance then, number and gender agreement on the participle and secondary predicate depend upon the understood semantic subject, namely a discourse, rather than a syntactic, antecedent. A non-syntactic rule, which says no more than that the features of an element which help to identify a subject cannot clash with those of the subject, is sufficient to regulate this agreement:

(7)   Properties of the semantic subject of a terminal node X, cannot clash with
features in X that index the subject

The referents of the semantic subjects of ((6)a, b and c) are identifiable from the morphological phi-agreement on the participles and secondary predicates. An interpretation at odds with the features present should not be possible according to the rule above, and this is indeed so. The number and gender of the speakers is unequivocal.

In the next section I turn to syntactic agreement, distinguishing those arguments licensed by case from those licensed in virtue of their agreement with the main verb.

3.3 Syntactic Agreement

3.3.1 Regular versus quirky predicate agreement

Recall that regular (non-quirky) predicates always agree with the argument they qualify:

(8)   a.   Ég tel börnin falleg

           I consider the children(Anpl) beautiful(Anpl)

      b.   Ég tel stelpurnar fallegar

           I consider the girls(Afpl) beautiful(Afpl)

      c.   Ég tel strákana fallega

           I consider the boys(Ampl) beautiful(Ampl)

The agreement pattern of regular predicates contrasts with that of quirky ones, recognised both by their non-nominative subjects and their lack of agreement with this subject. I deal with their subjects' case first. The case on these quirky predicates' surface subjects cannot be predicted from syntactic structure, but is an idiosyncratic phenomenon, peculiar to each predicate. Examples are given below.

(9) a. Henni var kalt   b. Hana vantadi vinnu   c. Hennar var saknad

    Her(D) was cold   Her(A) lacked job(A)   Her(G) was missed

    'She was freezing'   'She lacked/needed a job'   'She was missed'(by someone)

(Sigurðsson 2002 his (2),(3),(4))

The rigidity they display, in terms of the case they require on their subjects, is explained if a quirky predicate, as often assumed (see Chomsky 1981), is stored in the lexicon with its case-specification linked to the theta-role it assigns:

(10)   kalt : $[\theta^{CASE}]$

Assignment of quirky case then, is a syntactic relation which is theta-dependent, in that its locus of case-assignment is tied to that of the theta-role. The rule regulating this relation can be stated quite simply:

(11)   Quirky case assignment is Θ-bound

A quirky adjective cannot be combined with a subject whose case is at odds with the adjective's theta-linked case-specification. We see this in example (12)b), where the quirky adjective, *kalt*, which requires a dative subject, has a nominative one.

(12)   a.   Henni var kalt   b.   *Hún var kalt
            Her(D) was cold(dflt)   She(N) was cold(dflt)
            'She was freezing'   'She was freezing'

Unlike quirky adjectives, a regular adjective is stored in the lexicon linked to a bare theta-role. Morphological endings also have their own lexical entries, which in Icelandic amount to four case possibilities: nominative, accusative, dative and genitive. A rule of combination joins the adjective with a morphological ending, which ensures that case affixes, as functors in the sense of de Sciullo and Williams (1987), take an adjective with an external θ-role and deliver an adjective with an external theta-role linked to a specific case:

(13) Affix Input: Adjective θ

       Output: Adjective θ$_{CASE}$

Combining a regular adjective with a morphological ending gives the representation in (14).

(14)
$$A\ \theta^{CASE}$$
$$A\ \theta \qquad AFFIX\ (CASE)$$

The result is very similar to that of a quirky predicate. On the root node of the adjective the two predicates will look identical, but whereas the regular predicate's representation, as in (15)a, is derived, the quirky predicate, as in (b), has its case specified inherently:

(15) a.
$$A\ \theta^{CASE}$$
$$A\ \theta \qquad AFFIX\ (CASE)$$
        b. $A\ \theta^{CASE}$

Put into practice, the mechanism used for morphological case-agreement works as follows. Taking (8)c as an example, the theta-role introduced by 'fallega' (beautiful.Ampl) combines with the accusative morphological case affix, and this theta-role percolates to T-bar, where it is applied to the accusative DP:

(16)
```
              TP                          (I consider the boys beautiful)
            /    \
          D       T'
          Ég     /  \
               T     VP
                    /  \
                   V    TP
                  tel  /  \
                     DP     T' [θ^ACC]#
                 strákana(A) /  \
                           T    AP [θ^ACC]
                              fallega (A)
```

Quirky adjectives also lack morphological agreement. They invariably bear a default form, namely nominative, neuter, singular:

(17) a.   Honum er kalt   b.   *Honum er kaldum

        Him$_{(D3sg)}$ is freezing$_{(dflt)}$ Him$_{(D3sg)}$ is freezing$_{(D)}$

Their default status follows if we accept Economy as given, which at its simplest, requires an output of a linguistic operation to differ from its input. Building a construction where a quirky adjective agrees in case with its subject would be at odds with this principle. The quirky adjective (18)a), stored lexically with its case-specified theta-role, might combine with a separately stored morphological case ending,(18)b):

(18) (a)   kalt: θ^{DAT} (b)   AFFIX (DAT)

Once combined, as in example (19), where only the adjective's features have projected, the root node would consist of exactly the same information as was in its daughter, ruling such ineffectual projection out:

(19) *   A θ^{DAT}

        A θ^{DAT} AFFIX $_{(DAT)}$

The agreement distinction between regular and quirky adjectives extends to main verb agreement. A regular adjective combined with a main verb requires subject-verb agreement, but use of quirky adjective results in that verb being default. I turn to these facts next.

3.4 Main Verb Agreement

3.4.1 Agreeing forms versus Default forms

A copula verb connecting a regular adjective with its nominative subject, must agree in number and person with this subject:

(20)   Börnin eru/*er falleg

          Children.the(Nnpl) are/*is beautiful(Nnpl)

The opposite holds for copulas connecting quirky adjectives with their subjects, where a lack of agreement is imposed. We see this by taking a plural subject, and noting that the copula must be in the singular:

(21)   a. Strákunum er kalt   b. *Strákunum eru kalt

         Boys.the(Dpl) is(dflt[4]) cold(dflt)   Boys.the(Dpl) are(3pl) cold(dflt)

An account for this contrast comes from analyses that advocate a bi-modal approach to argument marking, initiated in Jakobson (1935/1966) and developed in Bittner and Hale (1997), Nichols (1986) and Neeleman and Weerman (1999). That is, that there are two ways of marking an argument as such: either through case assignment, or through subject-verb agreement, but crucially not both. In (21)a) then, the lack of subject-verb agreement comes about because the subject bears the inherent case bound up with the theta-role it has been assigned, ruling out the need, and so the possibility, of further identification from the verb. In contrast, the obligatory subject-verb agreement in (20) precludes structural case assignment to the subject. What then

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[4] Default on main verbs in Icelandic is 3rd person singular.

of the nominative that appears on 'Börnin'? The claim is that it is in fact no case at all. A more accurate representation of the example in (20) then, is as in (22) below.

(22)   Börnin eru falleg

        Children.the(npl) are beautiful(npl)

The empirical basis for this argument is not inconsistent with Sigurðsson (1993), where, building on work by Holmberg (1985) and Taraldsen (1994), it is noted that structural case correlates with the presence of agreement, and inherent case with its absence. All these approaches agree that there is a general tendency for languages to show dissociation between inherently case-marked subjects and subject-verb agreement, even if this is not absolute (see Anderson 1984 on Georgian). But the claim that nominative case is no case is controversial, and rejected in Sigurðsson (1991, 1996), so the next sub-section provides some support for it.

3.4.2 Bi-Modal Argument-Marking

Neeleman and Weerman (1999) offer a number of arguments in support of nominative case being a misnomer; here I concentrate on two. Firstly, in an agglutinative language such as modern Turkish, in most instances, nominative case contrasts with all other cases in having no affix. The second is that verbs do not select for nominative DPs, which makes sense on the reasonable assumption that heads do not select for the absence of a feature.

I turn first to Turkish, where, as shown in the paradigm below, plural affixes exist separately from case affixes. In the singular, the nominative of the noun is the bare

stem, but in the plural the 'ler' affix adjoins. Unlike the nominative form of the noun, all the other cases have their own peculiar case affix stacked on to the plural affix:

(23)   Modern Turkish paradigm for 'hand'

Singular:	*Nom*	el	Plural:	*Nom*	eller
	Gen	elin		*Gen*	ellerin
	Dat	ele		*Dat*	ellere
	Acc	eli		*Acc*	elleri
	Abl	elden		*Abl*	ellerden
	Loc	elde		*Loc*	ellerde

(N & W's (19))

An agglutinative language such as Turkish is a better indicator of where case exists than a fusional language like Icelandic, where it is difficult to separate case from phi features, since they are all contained within the same suffix.

Our second piece of motivation is based on the assumption that heads to do not select for absent features. If so, then a prediction made by the 'nominative-is-no-case' camp is that it should not be possible for a verb to select a nominative DP. Lexical case selection is not regulated by any structural rules of a language. For example, in the German, *Ich vertraue ihm nicht* (I don't trust him) the verb lexically selects a dative object, a fact not predictable from the sentence's structure. But such lexical selection of nominative objects appears to be absent. (see De Wit 1997 for Russian, Van Riemsdijk 1983 for German). Despite superficial appearances, Icelandic is not a counter example to this generalisation, even though in particular circumstances it allows nominative objects which control verb agreement:

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(24) Okkur   þótti   hann   fyndinn

     Us(Dfpl)   thought(3sg)   he(Nmsg)   amusing(Nmsg)

     'We found him amusing'

<div align="right">(Hrafnbjargarson (2001)</div>

Since the nominative case on the object is not determined by the property of a particular verb, but by the structure in which the verb appears, this does not refute the prediction made. Note that an example such as 'Her(A) like they(N)' (Icelandic) is not a counter example, since presence of nominative on a selected category does not mean that the verb selects for nominative, just as presence of plural on a category does not mean that the verb selects for plural. To ascertain whether case is lexically selected, one needs to look at the case-assignment rules of a language. If an argument has a case at odds with that predicted by these rules, then one can argue that it is lexically selected case. Crucially the appearance of nominative on non-subject arguments and subjects in finite clauses is predictable from the case-assignment rules of the language: if the subject bears a case other than nominative, then the lower argument gets nominative. A counter example would be a double-object verb, whose arguments have the pattern nominative, dative, nominative.

A further piece of corroboration for nominative case in Icelandic not being a proper case comes from the distribution of reflexives. It is well known that reflexives do not occur in the subject position of finite clauses in English:

(25)   *Ben$_1$ believed that himself$_1$ was the fastest runner in the class

Rizzi (1990) has argued that it is not subject-hood but agreement that prevents occurrence of a reflexive in these positions. He formulates this as the Anaphor-Agreement Effect:

(26) Anaphor-Agreement Effect

Anaphors do not occur in syntactic positions construed with agreement

(Rizzi 1990, p 27)

If it is agreement that prevents the reflexive in (25) from occurring, this would account for the felicity of a reflexive in the subject of the ECM clause below:

(27) Ben believed himself to be the fastest runner in the class

The quirky verb phenomenon in Icelandic provides a good way of confirming whether or not it is agreement that prevents reflexives from occurring in particular positions (see Everaert 1990 and Shiraki 2006). Notably, the Icelandic paradigm for reflexives is incomplete, it having no nominative reflexives:

(28)   *Icelandic Reflexive*

NOM	-
ACC	sig
DAT	sér
GEN	sín

Now recall that quirky verbs, whilst determining the case on their subjects, never agree with their subjects, exhibiting an obligatory default form instead:

(29) Mig   langar   að fara til Islands

Me(Acc) wants(dflt) to go   to Iceland(Gen)

'I want to go to Iceland'

Reflexives can occur in subject position if the verb is quirky, but not if that verb is regular:

(30)   Hann sagði að sig vantaði hæfileika.

He(N) said that REFL-SUBJ lacked-SUBJ ability

"He said that he lacked ability."   (Maling 1984, p 232)

(31)   *Jón segir að sig/sín/sér elski Maria

Jón(N) says that REFL-SUBJ loves-SUBJ Maria

"John says that he loves Maria."   (Everaert 1990, p 280)

Furthermore, despite Icelandic allowing 'nominative' DPs in what appear to be object positions, reflexives are barred in this position:

(32)   *Henni finnst sig/sín/sér veik.

Her(D) finds REFL-SELF sick

"She considers herself sick."   (Everaert 1990, p 281)

The emerging generalisation is that reflexives cannot appear in positions construed with agreement, as Rizzi (1990) argues.

There are, of course, languages in which all arguments are licensed by case, nominative included, such as Japanese, which has a full morphological case paradigm:

(33)   Japanese   'book'
        NOM   hon-ga
        GEN   hon-no
        DAT   hon-ni
        ACC   hon-o

But in such languages, verbal agreement is conspicuously absent, lending support to the bimodal analysis of argument marking:[5]

(34)　Tokyo-ga zinkoo-ga ooi.

　　　Tokyo-NOM population-NOM many

　　　'Tokyo's population is large'

Interesting for present purposes is that unlike Icelandic, whose non-quirky verbs agree with their subjects, Japanese, which has no subject-verb agreement, *does* have nominative anaphors:

(35)　John-ga [zibun/zibun-zisin-ga Mary-o seme-ta to] it-ta

　　　John-NOM self/self-self-NOM Mary-ACC blame-PAST COMP say-PAST

　　　'John said that he blamed Mary'

<div align="right">(Shiraki (2006) (his 78))</div>

The contrast between these two languages in this respect weighs quite heavily in favour of the bi-modal approach to argument-marking as adopted here.

A potential counter example to such an argument is given in Sigurðsson (1996), where adjectives which have nominative agreement in finite clauses, as demonstrated by (36)a are shown to have accusative agreement in ECM clauses, as in (36)b. This may lead one to question whether the bi-modal approach to argument marking can be upheld, since accusative is case and it is present on the subject of the exceptionally case-marked clause and accusative agreement is present on the adjective:

(36)　a.　　Strákarnir voru gáfaðir

---

[5] There are some who argue that the Japanese system of honorification is a form of agreement. But see Shiraki (2006) for evidence against this view.

the boys(Nmpl) were(3pl) intelligent(Nmpl)

b. Ég taldi strákana (vera) gáfaða

I believed the boys(Ampl) be(inf) intelligent(Ampl)

(Sigurðsson 1996 (27),(28))

But it is the main verb which provides the accurate test for whether or not the bi-modal approach to argument marking can be upheld, because it is through main-verb agreement, not adjectival agreement that an argument is said to be licensed. In (36)a) the main verb does agree with its subject, whereas in (b), although the verb is optional, when it does appear it is crucially without tense. If nominative and accusative do differ then, in that only the latter is a genuine case, the data above is expected, since the argument licensed through case, as in (b), shows no agreement with its verb.

With the agreement facts in place, the next section will turn to secondary predicate agreement in subject-controlled infinitivals. It will show that the copying mechanism mapped out in the first part of the paper allows for all case variations found with Icelandic, whilst precluding ungrammatical ones.

3.5 Agreement in Obligatory Control Infinitivals

3.5.1 Quirky Infinitivals

If the agreement of a quirky participle is regulated by its local subject in finite clauses, then one might argue that the same regulation obtains in infinitival clauses,

only that in this latter instance the subject is phonetically null. Such has been the reasoning in Sigurðsson (1991), where it is argued that PRO can bear structural or quirky case, thereby answering for the consistent agreement of quirky verbs across both finite and non-finite clauses.[6] Just as the dative subject in (37)a is responsible for the default form of the participle, so is the null (dative)-subject in the infinitival clause in (37)b:

(37)　　a. Strákunum var hjálpað/*hjálpaðir/*hjálpuðum.

　　　　　　The boys(D) was helped(dflt)/(*Npl.m)/(*Dpl.m)

　　　　　b. Strákarnir vonast til [að PRO vera a hjálpað/*hjálpaðir/*hjálpuðum]

　　　　　　The boys(N) hope for to (D) be helped(dflt)/(*Npl.m)/(*Dpl.m)

　　　　　　　　　　　　　　　　　(Sigurðsson 1991 his 19b and 20b)

Problems with a PRO-based account are addressed in section 6, but for now I turn straight to the present alternative, based on theta-role decomposition. This would work as set out in the tree in (40). The theta-role introduced by the quirky participle consists of two components, by now familiar, A and B. But recall from (11), that a quirky theta-role is linked to its case inherently, raising the question of whether case is linked to A or B:

(38)　　a.　　$[_\theta A^D, B]$　　　　　b.　　$[_\theta A, B^D]$

---

[6] PRO is of course a GB-construct and one might argue that the question of its existence is outdated, since the framework in which it was introduced has been superceded by minimalism. But interestingly one of the most recent theories of control, namely that of Landau (2000) retains PRO despite this theory being placed firmly in a minimalist setting. Sigurðsson (2002) also continues to posit PRO. So the answer to the question of whether or not we can explain the data above without recourse to PRO remains significant.

But given that B is concerned with semantic reference, whereas the task of A is to locate a licensed DP, it must be A with which the dative case feature is linked:

(39)   Inherent case is tied to the formal component of a theta-role: $[_\theta A^D, B]$

With the locus of the dative feature clear, we can move on to the example of the copying mechanism at work:[7]

(40)

$$\text{TP } [_\theta A, B]_{\#}$$

Strákarnir   T' $[_\theta A, B]$

T   VP $[_\theta A, B]$

vonast   CP $[_\theta B]$
$[_\theta A, B]$

C' $[_\theta A^D, B]$

til   C' $[_\theta A^D, B]$

að   TP $[_\theta A^D, B]$

T' $[_\theta A^D, B]$

T   VP $[_\theta A^D, B]$
vera   hjálpað
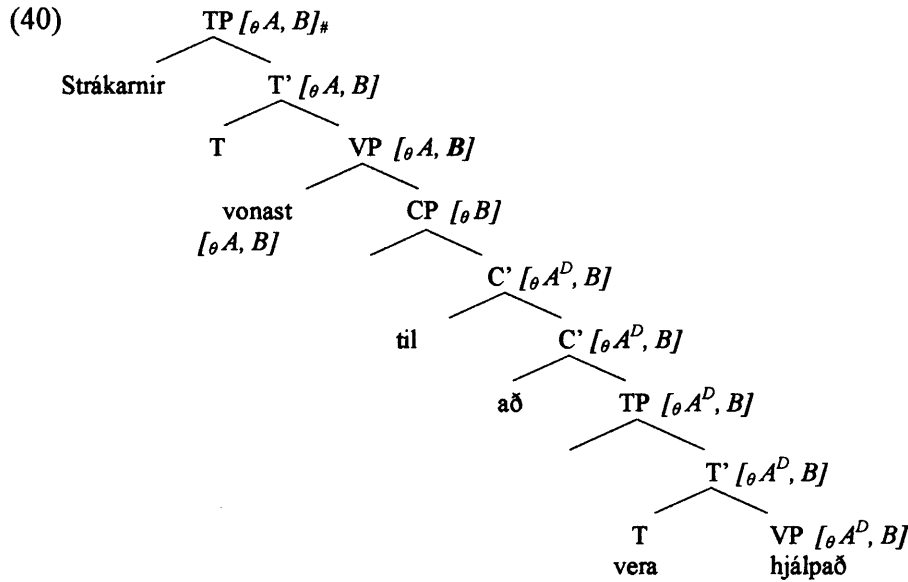
The composite theta-role introduced by *hjálpað* percolates till C'. Since A^D can go no further, separation of A and B is permitted by *Elsewhere*, and B percolates until reaching the external theta-role of the matrix verb with which it collapses. Copying of this composed theta-role to the root node, where it immediately dominates the matrix subject establishes the link between it and *hjálpað*. With this straightforward case illustrated, we turn now to secondary predicates, first illustrating their agreement possibilities, then answering for this pattern in the same way.

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[7] For clarity, the tree includes only those theta-roles that contribute to the relation to hand.

3.5.2 Secondary Predicates in Infinitivals

Secondary predicates in finite clauses exhibit agreement in case, number and gender with their antecedent:

(41) a. Strákarnir hittu <u>kennarann drukkinn</u>

boys.the(Nm.pl) met teacher.the(Amsg) drunk(Amsg)

b. <u>Strákarnir</u> hittu kennarann <u>drukknir</u>

boys.the(Nmpl) met the teacher drunk(Nmpl)

(Sigurðsson 2002 (72),(73))

In subject-control environments, the case-agreement on secondary predicates varies according to the type of verb used in the infinitival, not the verb used in the matrix. This becomes clear in the next set of examples which show the agreement possibilities for the regular secondary predicate, *drukkinn* (drunk), in infinitivals. The secondary predicate follows a regular and a quirky participle in the infinitivals in (42) and (43) respectively, but both of these examples have the same regular control verb in the matrix, namely *vona til* (to hope for), which takes a nominative subject. To control for possible interference from the matrix clause, examples (44) and (45) use a quirky matrix control verb, *vanta*, (to lack/need) which takes an accusative subject, and so will check whether case on the matrix subject can impact on the case-agreement of the secondary predicate in the infinitival. To sum up, two predicate types - regular and quirky - varying across the matrix and infinitive clauses give four

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possibilities, and collectively these examples show that there is no case copying across a clause.[8]

(42) Ekki hafði ég vonast til að vera sótt drukkin

Not had I$_{(N)}$ hoped for to be picked up$_{(Nfsg)}$ drunk$_{(Nfsg)}$

'I had definitely not hoped to be picked up drunk'

(43) Ekki hafði ég vonast til að vera hjálpað drukkinni/??drukkin

Not had I$_{(N)}$ hoped for to be helped$_{(dflt)}$ drunk$_{(Dfsg/??Nfsg)}$

'I had definitely not hoped to be helped drunk'

(44) Mig vantaði bara að vera hjálpað drukkinni/*drukkna af foreldrum mínum

Me$_{(ACC)}$ lacked only to be helped$_{(dflt)}$ drunk$_{(Dfsg/*Afsg)}$ by parents mine

'All that I needed was to be helped drunk by my parents'

(45) Mig vantaði bara að vera sótt drukkin/*drukkna af foreldrum mínum

Me$_{(ACC)}$ lacked only to be picked up$_{(Nfsg)}$ drunk$_{(Nfsg/*Afsg)}$ by parents mine

'All that I needed was to be picked up drunk by my parents'

I turn to (42) first, pictured in (48), which is consistent (but no more) with the secondary predicate's case-agreement being locally determined by the participle in the infinitival, as opposed to the control verb in the matrix. Recall that nominative is analysed here as the absence of case, so the theta-role complexes of the participle and the secondary predicate lack case-specification altogether. In accordance with the

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[8] These examples are not standard, in that they would be frowned upon by prescriptive grammarians, but they are heard frequently in the following context: 'I had been through so many uncomfortable things this evening, all I had left to do was to be helped/picked up drunk: the ultimate embarrassment!' (Gunnar Hrafn Hrafnbjargarson pc). But for even those informants who found some of the example pragmatically odd (but not ungrammatical), the agreement possibilities were unequivocal.

theta-role identification possibilities introduced in chapter two, reproduced in (47), these theta-roles identify on the node immediately dominating them, and the resulting composite percolates to CP. As a means of regulating theta-role identification, I incorporate the following rule to prevent conflicting cases:

(46)   Θ-Identification Rule: θ-role-identification must respect linked cases.

The implementation of this rule will impact on theta-role identification by allowing ((47)a,b,c) but ruling out (47)d), where two theta-roles are linked to different cases:[9]

(47)   (a) θ (b) θ^D (c) θ^D (d) * θ^A

     θ θ θ^D θ θ^D θ^D θ^D θ^A
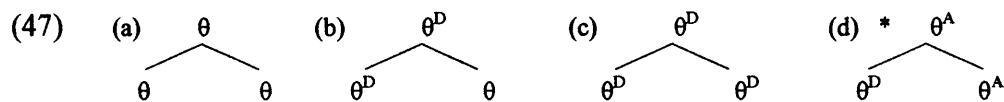
Identification of the participle's and predicate's theta-roles in (48) satisfies the above rule vacuously, neither of them being specified for case, as in (47)a). Only B continues past CP and identifies with the B-component of the matrix verb's external θ-role, again permitted in virtue of (47)a). Application of this composed θ-role to the matrix subject ensures that the matrix subject is interpretively linked with the matrix verb, as well as the participle and depictive in the infinitival clause:

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[9] Although only dative and accusative cases are illustrated in the examples, the rule applies to all cases.

(48) XP

Ekki   CP

  hafði   TP *[θA, B]#*

    ég(N)   T' *[θA, B]*

      t_hafði   NegP *[θA, B]*

        t_ekki   VP *[θA, B]*

          vonaðist   CP *[θB]*
          [θA, B]

                        C' *[θA, B]*

              til   C' *[θA, B]*

                  að   TP *[θA, B]*

                          T' *[θA, B]*

                  vera   VP *[θA, B]*

                      V*[θA, B]*   V *[θA, B]*
                      sótt (fsg)   drukkin('fsg)
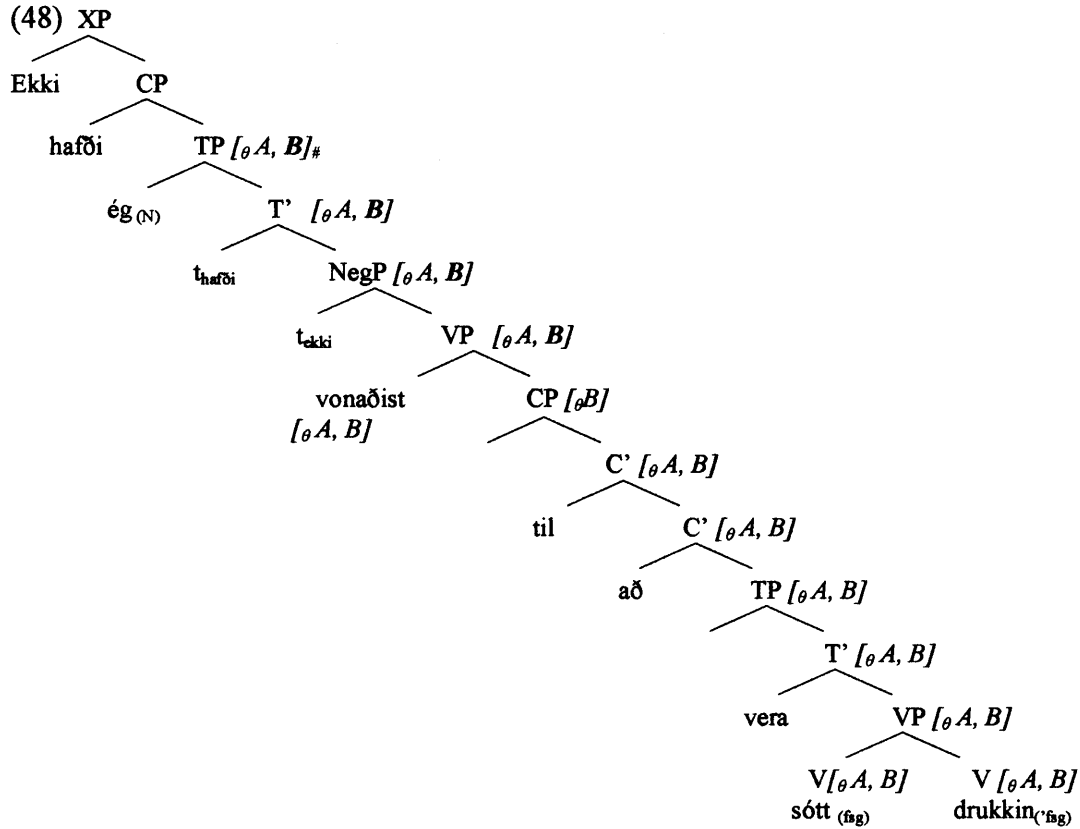
Support for cross-clause case copying being barred comes from the example in (45), repeated here as (49), where the accusative case on the subject in the matrix cannot be reflected on the secondary predicate in the embedded clause, which cannot agree with it:

(49)   Mig vantaði bara að vera sótt drukkin/*drukkna af foreldrum mínum

        Me(ACC) lacked only to be picked up drunk(Nfsg/*Afsg) by parents(D) mine(D)

   'All that I needed was to be picked up drunk by my parents

The representation of this telling example follows:

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(50)

$$\text{TP }[_\theta A^A, B]_\#$$

Tree (50):

- TP $[_\theta A^A, B]_\#$
  - Mig$_{(A)}$
  - T' $[_\theta A^A, B]$
    - VP $[_\theta A^A, B]$
      - vantaði $[_\theta A^A, B]$
      - VP $[_\theta B]$
        - bara
        - CP $[_\theta B]$
          - C' $[_\theta A, B]$
            - að
            - TP $[_\theta A, B]$
              - T' $[_\theta A, B]$
                - vera
                - VP $[_\theta A, B]$
                  - V$[_\theta A, B]$ sótt$_{(fsg)}$
                  - V $[_\theta A, B]$ drukkin$_{(fsg)}$
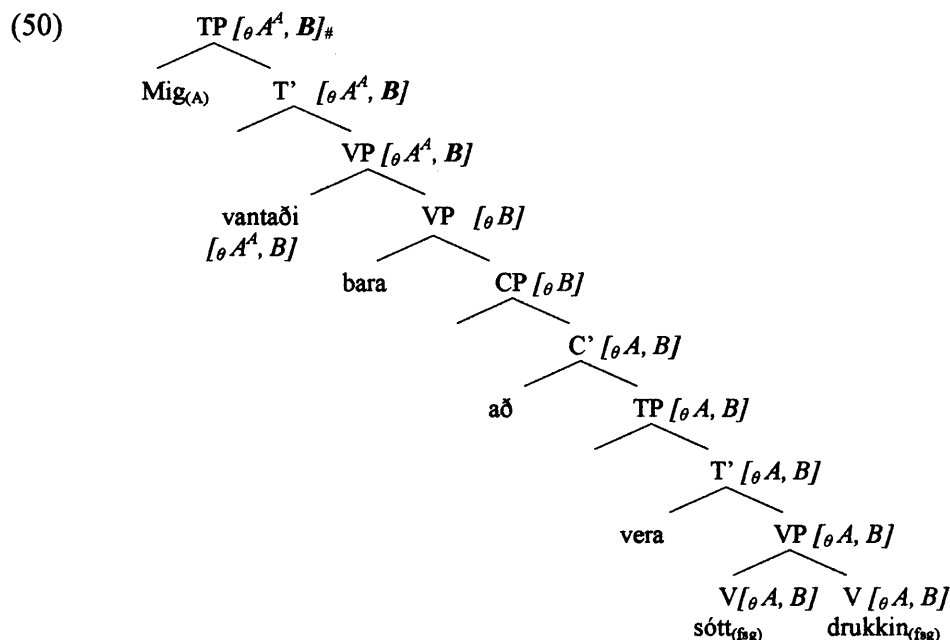
The two theta-roles, which bear no case-specification, of the regular participle and secondary predicate are identified on VP. At CP B has separated from A, and it continues until identifying with the B-component of the matrix verb's external theta-role, as permitted by (47)b. The external theta-role's accusative linked A-component is applied to the matrix subject, which bears the accusative case that the quirky verb specifies. This component, having been introduced in the matrix clause, cannot effect the case-agreement possibilites in the infinitival, since there is never any connection between it and the A-components in the infinitival clause.

The example in (43), whose representation is set out in (51), has a regular secondary predicate combined with a quirky participle in the infinitival clause. *Hjálpað* introduces a lexically determined dative theta-role, whilst *drukkinni* introduces a bare theta-role which has combined with a morphological dative affix. These two theta-roles, both having identical case specifications are free to identify on VP (see (47)c). *Hjálpað* exhibits the default ending, marking it out as quirky, and *drukkinni* shows

morphological case-agreement consonant with the dative-linked theta-role it has identified with. The composed theta-role separates and at CP only *B* continues to the matrix clause, where it identifies with the *B*-component of the matrix verb's external theta-role, permitted by (47)b). This theta-role is then applied to the matrix subject:

(51) XP
      /   \
   Ekki   CP
          /   \
       hafði   TP*[θA, B]#*
              /   \
          ég(N)   T' *[θA, B]*
                  /   \
             t_hafði   NegP *[θA, B]*
                      /   \
                  t_ekki   VP *[θA, B]*
                           /   \
                 vonaðist *[θA, B]*   CP *[θB]*
                                     /   \
                                  C' *[θA^D, B]*
                                 /   \
                              til   C' *[θA^D, B]*
                                    /   \
                                  að   TP *[θA^D, B]*
                                        /   \
                                     T' *[θA^D, B]*
                                    /   \
                                 vera   VP *[θA^D, B]*
                                        /   \
                              V*[θA^D, B]*   V *[θA^D, B]*
                              hjálpað   drukkinni(Dfsg)
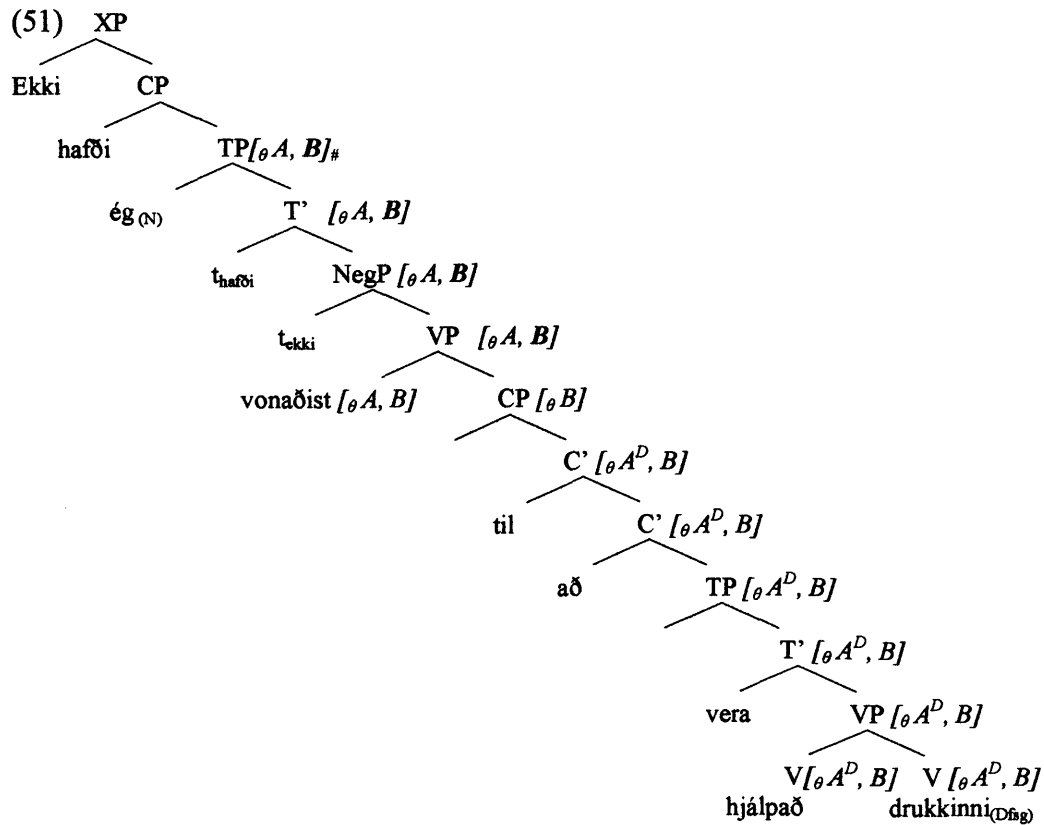
The speakers that accept, albeit not completely, a 'nominative' ending on *drunk* in the example above, as indicated in the original sentence in (43) are accounted for, since one of the two identifying theta-roles is unspecified for case, a scenario covered by (47)b):

(52)   VP *[θA^D, B]*
               /   \
        V*[θA^D, B]*   V *[θA, B]*
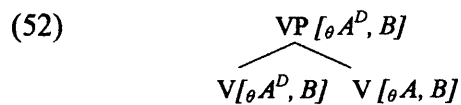
That the agreement of the secondary predicate, as demonstated on the tree in (51), is determined locally, as opposed to there being any transferal via the matrix subject, is corroborated by (44), represented in (53), where an accusative matrix subject cannot trigger accusative agreement on the secondary predicate in the embedded clause:

(53)
$$TP\ [_{\theta}A^{A},\ B]_{\#}$$

$Mig_{(A)}$ — $T'\ [_{\theta}A^{A},\ B]$

$VP\ [_{\theta}A^{A},\ B]$

vantaði $[_{\theta}A^{A},\ B]$ — $VP\ [_{\theta}B]$

bara — $CP\ [_{\theta}\ B]$

$C'\ [_{\theta}A^{D},\ B]$

að — $TP\ [_{\theta}A^{D},\ B]$

$T'\ [_{\theta}A^{D},\ B]$

vera — $VP\ [_{\theta}A^{D},\ B]$

$V[_{\theta}A^{D},\ B]$ $V\ [_{\theta}A^{D},\ B]$

hjálpað   drukkinni$_{(Dfsg)}$

*drukkna$_{(Afsg)}$
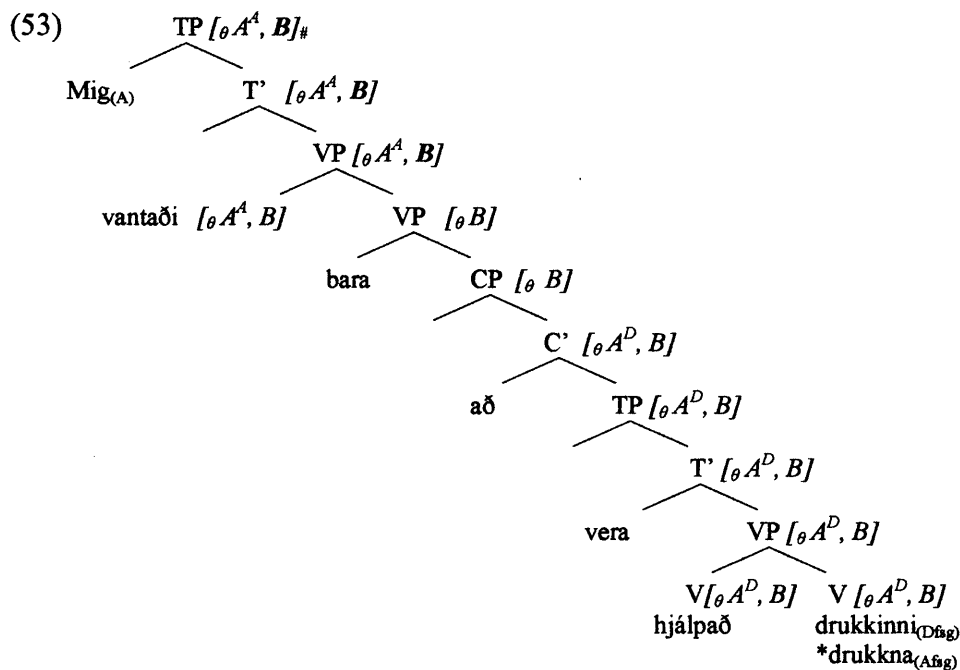
Accusative agreement on the secondary predicate is ruled out by the Θ-Identification Rule in (47). Despite *drunk* being a regular predicate, and so not lexically specified for case, by (13), it combines with a morphological case affix before entering the syntax. This makes its case feature visible to the syntactic operation of theta-role identification, and to conditions on that operation, in this instance the rule in (46): *Hjálpað* has a dative-marked theta-role and *drukkna* an accusative-marked one, prohibiting identification of their theta-roles:

(54) *   VP $_{[\theta A^A, B]}$

V$_{[\theta A^D, B]}$ V $_{[\theta A^A, B]}$
hjálpað   *drukkna
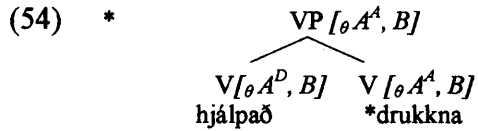
3.6   With or Without PRO?

The present account has extended to all the examples, allowing the possible ones, whilst precluding their ungrammatical counterparts, removing Icelandic's stature as a language that can provide conclusive evidence for PRO's existence. In the next section, however, we encounter data that are problematic for both the present account and one that utilises PRO, namely long-distance case-agreement. But is an account based on PRO nevertheless preferable to one that isn't? A comparison of the assumptions necessary for this account with those necessary for a PRO-based account, such as in Sigurðsson 2002, will demonstrate that there is little to distinguish them, both making very similar assumptions. What could tip the balance in favour of the present account is the last sub-section, which shows that PRO cannot actually do the task it needs to.

3.6.1   Long-Distance Case-Agreement

The previous section focussed on secondary predicates in controlled clauses, comparing the agreement options for predicates merged with quirky participles with those for predicates merged with regular participles. The resulting generalisation was that a secondary predicate merged with a quirky participle must agree in case with the would-be subject of that quirky participle, cross-clause case-agreement being entirely out. This is expected if quirky case is theta-linked and in this story regulated by Θ-

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identification (see the stricture in (46) above). This case-agreement then, is a local, syntactically regulated relation based on copying:

(55)   Local case-agreement is regulated by Θ-identification

But a complication to this thus far neat picture is that in restricted circumstances, Icelandic exhibits long-distance case-agreement. Specifically, long-distance case-agreement is a universally accepted option on semi-[10], primary and secondary predicates within object-controlled complements (see especially Þráinsson 1979 and Sigurðsson 1989, 1991). In each instance, cross-clause agreement with the accusative matrix controller is the more widely accepted option:

(56)   a.   Jón bað Bjarna að koma einan

              Jon(N) asked Barni(A) to come alone(A)

        b.   %Jón bað Bjarna að koma einn

              Jon(N) asked Barni(A) to come alone(N)

Of the 6 Icelandic informants on which this data was tested, all accepted (56)a) as perfect, whereas there was a clear split for (56)b), with half accepting it and half rejecting it. A similar pattern of judgements obtains for secondary predicates in object-controlled complements:

(57)   a)   Jón bað hana að dansa nakta

              Jon(N) asked her(A) to dance naked(A)

        b)   %Jón bað hana að dansa nakin

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[10] I use this admittedly vague term to refer to elements such as 'alone'.

Jon(N) asked her(A) to dance naked(N)

5 out of 6 informants accepted (57)a) as perfect and 1 found it marginal. For (b), acceptance was again split, with 3 finding (b) perfect and 3 rejecting it completely[11] Primary predicates follow suit: again the accusative agreement in (58)a) was accepted by all, whereas 3 found the nominative in (b) perfect and on the same par as (a), whilst 3 speakers rejected it completely.

(58)   a.   Maria bað hana að vera góða

              Maria(N) asked her(A) to be good(A)

      b.   %Maria bað hana að vera góð

              Maria(N) asked her(A) to be good(N)

So the descriptive generalisation is that in all instances the element in question, be it a semi-, a secondary or a primary predicate, prefers to agree in case with its semantic subject, although nominative remains a possible, if less widely acceptable alternative.[12] The non-syntactic rule proposed for phi-agreement, repeated in (59) below, in a sense extends to both the cross-clause accusative and the nominative agreement:

(59)   Properties of the semantic subject of a terminal node X, cannot clash with

         features in X that index the subject

In all of the examples in (56) - (58) the semantic subject is the accusative object in the matrix clause, and X is the semi-, secondary or primary predicate respectively and the

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[11] The same 3 that had rejected the nominative agreement in example (55b)
[12] Of these 6 informants, there was a general trend for the younger informants (20 yrs – 30yrs) to reject the nominative. The 3 more 'mature' ones tended to rate them equally.

possibility of the nominative is also not at odds with this rule, if nominative represents an absence of case, as argued above. The negative formulation of the rule above permits absence of case-agreement between X and X's semantic subject, a circumstance represented by instances labelled conventionally as nominative.

But it is nonetheless strange that phi-feature agreement is obligatory, whereas case-agreement is optional. And another reason for being suspicious about a semantic-centred explanation of this optional agreement surfaces when we note what purpose these features serve. Gender and number agreement on a predicate identify interpretative properties of their antecedent, unlike case. It does not make intuitive sense then, that those features which have no role in interpretation be regulated by a semantic rule.

The question remains as to why there is an object- subject-asymmetry in case-agreement, in that availability of long-distance case-agreement is limited to when there is an object in the matrix clause. I will take an, at this point, stipulative measure in trying to address this question. The system operative for the subject-control cases in (42) to (45) extends to that of object-control in that if a quirky verb occurs in the infinitival clause, the long-distance case-agreement disappears. The telling example comes from an adaptation of (56), as in Boeckx and Hornstein (2003), where the quirky predicate *bored* replaces *come* in the complement (their 17, but with my own reported judgements) and long-distance agreement is not possible:

(60) a. ?Jón bað Bjarna að leiðist ekki einum

      Jon(N) asked Barni(A) to be-bored not alone(D)

      'Jon asked Barni not to be bored alone'

  b. *Jón bað Bjarna að leiðist ekki einan

      Jon(N) asked Barni(A) to be-bored not alone(A)

'Jon asked Barni not to be bored alone'

c.   %?Jón bað Bjarna að leiðist ekki einn

Jon(N) asked Barni(A) to be-bored not alone(N)

'Jon asked Barni not to be bored alone'

Although not totally acceptable to all speakers, the agreement possiblities are quite clear. 4 out of 6 judged the example with dative agreement on the semi-predicate as slightly marked (but definitely not ungrammatical), whereas the remaining 2 judged it as perfect. The accusative was rejected absolutely by all 6 informants, whereas the nominative again gave a mixed bag of results: 2 found it slightly marked (but not worse than the dative), 2 judged it as bad (worse than the dative), and 2 rejected it absolutely.[13] [14]

So an assumption made here is that the syntactic rule that regulates quirky case overrides long-distance case-regulation. Repeated from (11) in section 3.3, local case-agreement obtains when the verb with which the semi, secondary or primary predicate is combined is quirky:

(11)   Quirky case assignment is Θ-bound

The less widely accepted nominative in (60)c) is not problematic, since the Θ-Identification rule in (46) allows both possiblities. In both (60)a) and (60)c) the *B*-component introduced by 'alone' identifies with the *B*-component of the dative-linked theta-role. Dative agreement is preferred, but absence of agreement is not barred. On this account, a theta-role unlinked to a case specification escapes

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[13] The judgements indicated above deviate from those reported in Boeckx and Hornstein (2003), who put a star against the nominative option.

[14] Again, it was the 3 older informants that accepted the nominative.

regulation from (46), thereby leaving a gap in the system. The examples in (56) - (58) fall within this gap. The verb local to the semi, secondary and primary predicates is not a quirky one, so the case-specification of the theta-role in the controlled complement is undetermined. The predicates in question will prefer to agree with their semantic subject (i.e. the matrix object), but lack of case-agreement is also available. So when nothing in the infinitival determines the case-agreement on the predicate in question, that agreement can be determined by the controller. But to limit this option to object-control, we must further state a locality restriction such that such case-agreement cannot cross VP:

(61)   Locality Restriction on Long-Distance Case-Agreement:
        When case-agreement is not theta-linked, then case on a predicate
        may be determined by the controller iff the controller is within VP

The rule above at presence lacks explanatory force, although one way of motivating it would be to assume that only structural case can give rise to long-distance agreement, but note that a PRO-based account needs to adopt a very similar ordering of rules to the one assumed above, in order to account for the possibility of long-distance agreement when the verb in the controlled clause is regular, as in (62)a) against its absolute ban when that verb (participle) is quirky, as in (b).

(62)   a.   Jón bað Bjarna að koma einan
                Jon(N) asked Barni(A) to PRO(A) come alone(A)

        b.   ?Jón bað Bjarna að leiðist ekki einum/*einan
                Jon(N) asked Barni(A) to PRO(D) be-bored not alone(D/*A)

PRO must be barred from inheriting case when its predicate is quirky (b), yet allowed to inherit case when the verb is regular (a). So it could be claimed that cross-clause

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case-feature transferral is blocked when PRO's predicate is quirky, which is very similar to the assumptions made in the present account. But such an assumption is not sufficient, since there remains the question of why nominative case can be (optionally) assigned to PRO in quirky infinitivals. Recall that half the speakers used for the present study (n=6) accepted nominative in (60)c), repeated below:

(60)   c.   %?Jón bað Bjarna að PRO leiðist ekki einn

                Jon(N) asked Barni(A) to PRO(case?) be-bored not alone(N)

In an account in which nominative is a proper case it is difficult to explain why it is nominative that shows this special behaviour.

The pattern of judgements within this sample, where older speakers treated nominative case-agreement (i.e. absence of case-agreement) and cross-clause case-agreement as equally acceptable and younger speakers rejected the nominative, could be explained if the age-difference observed in this small sample represents a particular stage of language change, along the lines of Kroch (1989). We can imagine that a person's grammar consists of one rule to start with, Rule X, which demands a lack of case-agreement, but at a later stage, a second rule, Rule Y enters that same person's grammar, which demands case-agreement. These two rules will compete with each other, until eventually, at the last stage, one rule overrides the other:

(63)   a.   Rule X: Lack of case-agreement
                Rule Y: Case-agreement

        b.   Stage I   Rule X
                Stage II   Rule X and Rule Y
                Stage III   Rule Y

Crucially, in an analysis such as Kroch (1989), the two grammars can be present within the same speaker. So to relate this back to the present sample, the older speakers, who allow presence or absence of case-agreement, would be at stage II in the above example, whereas the younger speakers, who reject the lack of agreement, would be at stage III. Naturally, the suggestion above is only tentative, as a larger sample is necessary to see if the age-difference noted in this study represents a trend of the population in general.

3.6.2 Icelandic as Evidence Against PRO?

Icelandic hasn't shown that we need PRO, but might it in fact offer an argument against PRO? I return briefly to how a PRO-account runs, using Sigurðsson 2002 as an example, to illustrate the problem it creates. In this account the agreement properties of secondary predicates such as in (64) and the like are transferred via PRO.

(64)   Henni leið illa drukkinni

Her$_{(Dfsg)}$ felt$_{(3sg)}$ badly drunk$_{(Dfsg)}$

'She felt badly when drunk'   (Sigurðsson 2002 (76))

On this view PRO inherits case, number and gender features from its antecedent, before transmitting these values to the secondary predicate:

(65)   Her$_{(D3fsg)}$ felt badly [PRO$_{(D3fsg)}$ drunk$_{(D3fsg)}$]

Using PRO as the means of transferral localises the long-distance agreement relation, but not entirely successfully. If an element inherits features subsequent to its introduction into the syntax, this is a problem for inclusiveness (Chomsky p225 1995), which requires syntactic operations to have access to items in the numeration only. In the account above such inheritance is forced, since PRO is the source of the agreement on the secondary predicate, which, as we have seen from the examples we began with in (6) varies according to the sex and number of the speaker(s). But this problem aside, syntactic transferral only works in the 3rd person. The predicate *drukkinni*, has dative, feminine, singular morphology. But from where does the feminine agreement originate?

(66)   Mér leið illa drukkinni

   Me$_{(D1sg)}$ felt$_{(3sg)}$ badly drunk$_{(Dfsg)}$

   'I felt badly when drunk'

In order for *drukkinni* to inherit gender features from PRO, PRO must be in the 3rd person because 1st and 2nd person have no gender feature, yet if PRO is to be interpretively linked with the matrix controller, it must be in the 1st person:

(67)   a.   *Me$_{(D1sg)}$ felt badly [PRO$_{(D3fsg)}$ drunk$_{(D3fsg)}$]

   b.   *Me$_{(D1sg)}$ felt badly [PRO$_{(D1fsg)}$ drunk$_{(D3fsg)}$]

For PRO to work, one would need to attribute it with feature combinations that don't exist on any overt counterpart.

3.7 Summary

The empirical difference between the present account and one that utilises PRO is slight. In the former, a theta-role regulates the case on the predicate, in the latter PRO does. In fact, it is in the present account's favour that it makes very similar predictions to a PRO-based story, accounting for the data that PRO was initially introduced for. But the present account makes a distinction between those features that are regulated syntactically (quirky case) and those that fall outside of this boundary (phi-agreement). Examples of arbitrary control and control by an antecedent that lacks the features necesssary for inheritance have shown this demarcation to be warranted. Whether or not it also preferable to a story that utilises PRO, depends not just on PRO's felicity as a transferral mechanism, but also on the extent to which we are willing to rely on an element whose very definition remains ad hoc. By offering an account of the case-agreement properties of predicates in Icelandic infinitival clauses, the theta-role decomposition approach adopted here has not only shown that PRO is unnecessary but that it cannot actually fulfill the task for which it was proposed.

In the next chapter, I move away from obligatory control and on to non-obligatory control; the question raised is similar, in that it will be asked whether PRO is indispensable to this control relation, but in our analysis of this relation we move out of the syntactic realm.

Chapter 4

Non-Obligatory Control

4. 1 Introduction

The main tenet of this thesis has been that the control relation can be represented without recourse to a PRO-subject acting as an intermediary between the matrix controller and the controlled infinitival complement. For obligatory control this was achieved by implementing a mechanism of theta-role assignment based on theta-role percolation. Through this copying procedure, a direct relation between the external theta-role in the infinitival and the antecedent in the super-ordinate clause was forged, thus enabling the apparent subject properties of controlled infinitives to be reinterpreted as properties associated with the external role. Specifically, the interpretative component of the infinitival's external theta-role was copied to the matrix VP, where it immediately dominated the matrix verb's external theta-role destined for the controller. Identification of this interpretative component with that same component of the control verb's external theta-role secured the link between controller and controllee:[1]

---

[1] For ease of exposition, the tree shows the path of the embedded verb's theta-role only.

(1)   TP *[B]*ₕ

```
              TP [B]ₕ
            /      \
         DP         T' [B]
        Peter      /    \
                  T      VP [B]
                        /    \
                       V      CP [B]      - copying of [B] in isolation to matrix clause
                     hoped   /    \
                            C      TP [A,B]
                                  /     \
                                 T'  [A,B]
                                /      \
                               T        VP [A,B]
                              to        win
```
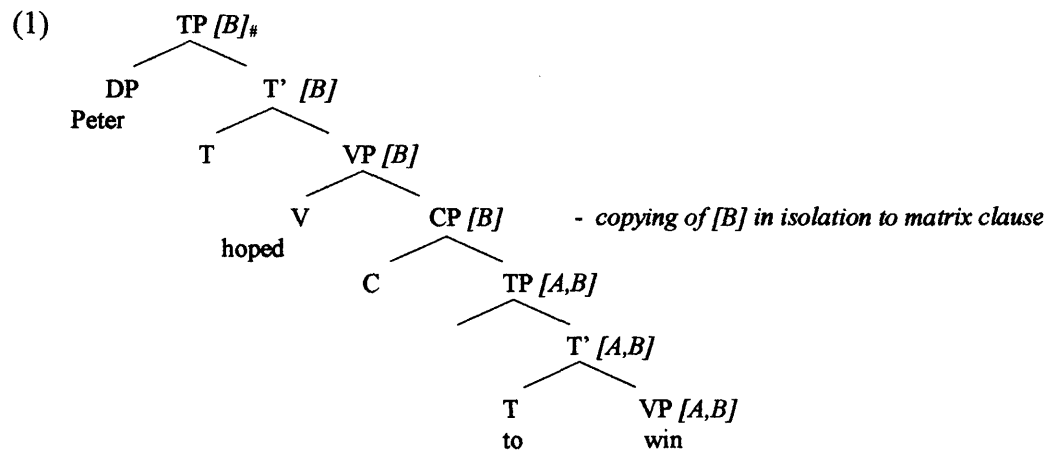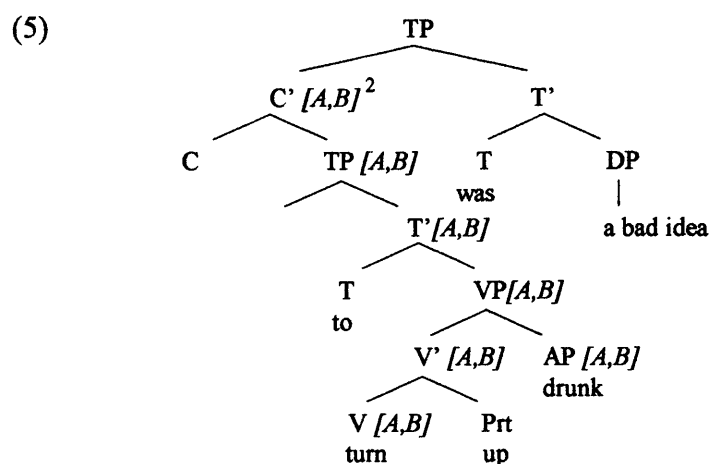
These two syntactic mechanisms of copying and identification make possible a PRO-free representation of obligatory control. But what of non-obligatory control? The evidence for PRO in this relation is just as strong as it was for obligatory control:

(2)   PRO to introduce oneself at a party is the done thing

(3)   PRO to turn up drunk was a bad idea

(4)   PRO to all leave at the same time would look bad

In each of the examples above, positing a PRO-subject gives us a structurally represented, local antecedent for the reflexive, secondary predicate and floating quantifier respectively. But the syntactic mechanism used for the obligatory control examples cannot extend to cases of non-obligatory control, since, as we see in example (2), (3) and (4), in non-obligatory control there is (often) no structurally represented antecedent at all. The problem becomes apparent in the example below; it demonstrates how lack of an antecedent in the super-ordinate clause means that the copying procedure implemented for obligatory control is unworkable for non-obligatory control. The theta-role of the verb and secondary predicate identify on VP.

Further copying of the theta-role, however, is futile, there being nothing in the structure that could function as a semantic argument. As such the theta-role remains unassigned:

(5)

```
                          TP
                  _____|_____
             C' [A,B]²              T'
            ___|___              ___|___
          C      TP [A,B]       T        DP
                 __|__          was      |
                T' [A,B]              a bad idea
              ___|___
            T       VP[A,B]
            to      __|__
                  V' [A,B]    AP [A,B]
                 ___|___      drunk
               V [A,B]   Prt
               turn      up
```

So the motivation for a PRO-subject in non-obligatory control seems stronger than it was for its obligatory cousin, the direct relation between antecedent and dependent established for obligatory control being impossible. The rest of this chapter develops a non-syntactic solution for this problem.

The chapter is laid out as follows: section 4.2 gives a brief outline of the proposal; essentially it will anticipate that two different rules are operative in non-obligatory control. One rule operates when the understood subject is interpreted generically and another when the subject receives a specific interpretation. Section 4.3 will remind the reader of the constructions that fall within the non-obligatory control domain, but will focus particularly on interrogative complements. Despite their non-obligatory-

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[2] An argument will be developed later in this chapter to the effect that the external theta-role in an NOC-infinitival does not in fact percolate beyond TP, but this does not effect the point made here, namely that there is nothing in the structure to which the theta-role can be assigned.

control classification being widely accepted, this classification has been rejected in Landau (2000), where they are realigned under obligatory control, more specifically as partial control. In this section, I show this realignment to be incorrect. Section 4.4 is concerned with predicting the distributional differences that separate non-obligatory control from obligatory control. A structural restriction on copying will achieve this end. In section 4.5, I look at genericity in more detail and identify the control structures that have a generic reading. I end by introducing an LF-interpretative rule that operates on all non-obligatory control structures. Generically interpreted non-obligatory control structures require no more than this rule. Non-obligatory control structures whose understood subjects are interpreted specifically are regulated by a discourse rule, in addition to the LF-interpretative rule, the focus of section 4.6. In the same section I show that such a rule is necessary independently of the constructions to hand and give evidence for the extra-syntactic status of this rule. The final sections of this chapter investigate whether a combination of these two rules, LF- and discourse-governed respectively, can account for two other phenomena. The first is the so-called linked reading effect introduced in Lebeaux (1984), such that when two PROs appear in the same sentence, the one is dependent for its interpretation on the other; in fact, we will have good reason to suggest that this problem is orthogonal to control. Nonetheless, the LF-rule introduced for non-obligatory control can explain this data. The second phenomenon is that of the null generic object of Rizzi (1986) and we will see how the combination of the LF- and discourse-governed rule might account for this phenomenon. The conclusion can be anticipated: a representation of control does not require PRO.

4. 2 Extra-Syntactic Regulation of Non-Obligatory Control

Just as was demonstrated for obligatory control in chapter 2, we will see that a representation of non-obligatory control is not aided by positing a PRO-subject and that, granting extra-syntactic regulation of non-obligatory, an analysis which gives theta-roles a syntactic status is preferable to one in which subject properties depend on the ambiguous category that PRO is. A non-syntactic response is motivated independently of the inability of the copying mechanism to cater for the examples in (2), (3) and (4), since, as we will reiterate in the next section, non-obligatory control is not syntactically constrained in the way that obligatory control is. Given its substantial divergence in this respect, it would be counter-intuitive to place the regulation of non-obligatory control within the syntactic realm. To sum up the proposal in brief, it will be argued that a theta-role not saturated syntactically is subject to an LF-interpretative rule, which attributes the theta-role with a [+human] specification.

(6)   LF-Rule: Unassigned θ-role → [+human]

The [+human] specification is the very minimum of interpretative specifications that a semantic argument can bear in order to qualify as such. Application of this rule must be restricted so as to avoid a circumstance in which obligatory control structures become instances of non-obligatory control through attributing the 'controlled' theta-role with a [+human] specification. For the moment, I will assume that this interface rule only occurs whenever obligatory control cannot, with a view to refining this restriction as we proceed. The LF-rule suffices to cater for non-obligatory control examples in which the interpretative subject is understood generically as in (7), but something more is needed for cases of non-obligatory control which have a specific

antecedent, either syntactically represented, but not locally as in (8), or simply inferred as in (9).

(7)   John knows how to fix the head gasket

(8)   John$_i$ said that to PRO$_i$ to get there on time would be very difficult

(9)   To finish off one sentence in peace would be nice

In long-distance cases, such as example (8) above, a [+human] specification isn't sufficient, since the understood subject of the infinitival is a definite one, namely the non-local argument *John* in the super-ordinate clause. The sentence in (9) is different again, in that although there is no potential antecedent in the structure, a specific implicit argument is inferred. That is, the reader assumes that it would be nice for a certain person to be able to complete one sentence without being disturbed. For instances such as these, referential candidacy is decided by the degree of saliency of prospective antecedents. The notion of Accessibility, as developed in Ariel (1988), will determine how the [+human] theta-role's reference is supplemented. Briefly, a separate discourse-governed rule will take the most accessible (where 'accessible' is defined later) antecedent in the discourse and match its reference to that of the [+human] theta-role:

(10)   Discourse-Rule: An underspecified [+human] argument can only be linked to a highly accessible antecedent

These two extra-syntactic rules will collectively cover all the non-obligatory control examples. This will be shown for infinitival subject clauses, controlled interrogative complements, verbal gerunds, control with implicit arguments and long-distance control. The criteria under which these constructions are placed within the non-

obligatory control-bracket were given in chapter 1, but I repeat them in 4.3 below. In the main, they adhere to Williams (1980), where non-obligatory control relations are essentially seen as left-over cases that do not conform to the syntactic restraints operative on obligatory control structures. The current delineation of non-obligatory control does not diverge substantially from this view, in that non-obligatory control is considered to be a heterogeneous group, so uniform rules to which this relation must comply are unexpected. But there is an additional entry here, which takes on board an observation in Manzini 1983. It runs in the opposite direction from the other criteria, in that it actually places a demand on non-obligatory control that is absent from obligatory control. This is that the understood subject be interpreted as human. Non-obligatory controlled infinitivals also appear to have independent tense, an observation I take on board from Landau (2000).

4. 3   The NOC Cut

Recall the conditions that regulated obligatory control structures. These included the need for an antecedent, as in (11)(a), a requirement that said antecedent be theta-marked, as in (b), that this antecedent be local, as in (c) and that it c-command 'PRO' as in (d). Lastly, the understood subject cannot host split antecedents, as evidenced by the infelicitous example in (e).

(11)   a) $Bill_i$ tried [PRO_i to organise himself]

        b)   *It_i was tried [PRO_i to organise himself]

        c)   *$Bill_i$ thinks it was tried [PRO_i to organise himself]

        d)   *$Bill's_i$ aunt tried [PRO_i to organise himself]

        e)   *$Bill_i$ asked Ben_j [$PRO_{i\&j}$ to kiss Bobby behind the bike shed]

As Williams (1980) originally demonstrated, these criteria operative in obligatory control, do not regulate non-obligatory control. Non-obligatory control relations may conform to some of them, but they do not exhibit all and in some instances lack them entirely. I repeat the revealing constructions below:

(12)   [To go to the lecture drunk] wasn't one of your best ideas

(13)   [Peter knows [cp how [to fix the head gasket]]]

(14)   [Walking back home yesterday], a brick fell on my head

(15)   a)   [It is fun [to dance]]
             (It is fun for x, for x to dance)

        b)   [[To finish off one sentence in peace] would be nice] (for x)

(16)   Peter said that to get there on time would be very difficult

Infinitival subjects, shown in (12), verbal gerunds, as in (14) and implicit control constructions, exemplified by (15), have no structurally represented antecedent at all. And although the interrogative complement in (13) does have a non-local argument in the super-ordinate clause, this is not the antecedent for the understood subject in the infinitival, which is interpreted generically. And lastly, the long-distance control case in (16) can ignore the locality condition that regulates obligatory control. The same example also tolerates split antecedents, separating it further from obligatory control, which does not:

(17)   Peter said to Paul that to get there on time would be very difficult for them

In contrast to this absence of restrictions, recall that non-obligatory control *is* subject to a semantic restriction which obligatory control is not, namely that the understood subject in non-obligatory control must be interpreted as human. I repeat the contrast between the two relations below:

(18)   a.   This book$_i$ promises PRO$_i$ to be a great read   (Obligatory Control)

        b.   This book is a great example of how PRO$_{arb}$ to
              entertain children.   (Non-Obligatory Control)

The semantic criterion that non-obligatory controlled understood subjects must meet then, says simply the following:[3]

(19)   Understood subjects of non-obligatory control must be +human

Note that controlled clauses headed by adjuncts, whose placing into the obligatory control-category might latterly be considered controversial, patterns with obligatory

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[3] The formulation of the semantic criterion above may seem too strong in light of the examples below:

a)   Field mice are easy feed for the nocturnal owl. To go out at night therefore, is dangerous.
b)   Trotting in the field yesterday, some barbed wire got entangled round my horse's hoof.

But such sentences are more indicative of our tendency to refer to non-human entities as though they had peculiarly human characteristics (such as our reasoning capacity) and in light of this they do not constitute counter examples to the +human requirement. Another potential counter example is provided by (c) below. But there is reason to believe that this is a nominal gerund as opposed to a verbal gerund. Verbal gerunds, for example, do not take determiners, contra (d), and permit adverbs as modifiers, as opposed to APs, contra (e).

c)   Melting at room temperature is typical of ice
d)   The melting of ice is expected at room temperature
e)   Unexpected/*unexpectedly melting of ice at room temperature...

control, in not being subject to this semantic restriction, further supporting its placement in the obligatory control category:

(20) a) The bomb exploded whilst sitting in the hands of the detonator

      b) The book was rejected despite entertaining the children for hours.

In addition to this semantic restriction on the understood subject in non-obligatory control, such clauses carry independent tense:

(21) a. [Going to the lecture drunk today] will upset your mother next week
      b. [Walking home yesterday] will guarantee you a lift today
      c. Peter said yesterday that [to get there on time today] will be very difficult for him
      d. John$_i$ knew already what [to buy him$_i$ in London tomorrow]

Independent tense will become important when we formulate the LF-rule operative on these clauses' understood subjects.

Before moving on to how the distributional differences of obligatory- and non-obligatory control can be predicted in this system, I spend a little time justifying the classification of interrogative complements under non-obligatory control. My reason for doing so is that more recently, in Landau (2000), they have been reclassified under obligatory control.

4.3.1 Interrogative complements: clarifying their non-obligatory control character

Interrogative verbs select a CP-complement, but the generic (+human) character of the understood subjects of these complements suggests they are not instances of obligatory control:

(22)   Peter knows how to fix the head gasket

        'Peter knows how one could/should fix the head gasket'

Although the categorisation of interrogative complements under non-obligatory control is widespread (see Williams 1980, Chomsky 1981, Bresnan 1982, Manzini 1983, Koster 1984 and Hornstein 1999), latterly they have been placed in the obligatory control basket in Landau (2000). But it is worth noting why the present account sees an obligatory control label as erroneous. In Landau (2000), any infinitival complement whose empty subject is VP-internal[4] is categorised under obligatory control, rather than non-obligatory control, thereby placing interrogatives firmly within obligatory control. Recall from chapter 1, that within the category of obligatory control, Landau makes a further split between so called 'exhaustive' and 'partial' control. In the former relation, the interpretation of the infinitival subject coincides absolutely with that of its antecedent, whereas in the latter, the interpretation of the infinitival subject need only include that of the antecedent, but can also refer to more individuals not present in the structure. To take Williams' original example, where this phenomenon was first noted, a collective predicate in the infinitival can refer to the antecedent and other individuals:

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[4] Landau assumes a version of the VP-internal subject hypothesis, wherein subjects start out in VP, before moving to Spec-TP.

(23) I_1 want PRO_{1+} to meet at six   Williams (1980)

Interrogative complements are placed within this 'partial control' category in Landau (2000), where the following examples are offered for corroboration:

(24)   a)   *$John_1$ wondered [$_{CP}$ who PRO to introduce him_1 to]

         b)   *Sue_1 asked [what PRO to buy her_1 in Rome]

         c)   *We_1 contemplated how to promote us_1

         d)   *$John_1$ wondered [$_{CP}$ how PRO to talk to him_1 about oneself]

(Landau's 31a, c, d and 35)

The ungrammaticality of the above examples are given as evidence of a condition B effect, which should be absent if PRO in the infinitival were truly arbitrary. The fact that the pronoun in the infinitival cannot be co-referential with the matrix subject supports an analysis in which the reference of PRO includes the matrix subject, hence the condition B effect. When the pronouns in (24) (a and b) are substituted with anaphors the examples become grammatical, thereby confirming that it is condition B that is responsible:

(25)   a) $Mark_1$ wondered [$_{CP}$ who PRO to introduce $himself_1$ to]

         b) Sue_1 asked [what PRO to buy $herself_1$ in Rome]

(Landau's 32 (a and d))

There are two points worth clarifying here: firstly, whether or not the infelicitous examples in (24) are representative of all controlled interrogative complements and secondly, whether in order to qualify as non-obligatory control the empty subject in

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arbitrary control constructions is necessarily restricted to one interpretation, with the closest overt counterpart being 'one'. I would like to argue that although the difficulty with the examples in (24) is indicative of Condition B being operative, the Condition B effect does not, rather crucially, hold of all interrogative complements. This leads on to my second point, which is that the indefinite pronoun, *one,* is only one of a number of possible interpretations that the understood empty subject in non-obligatory control constructions can have. Put more clearly, under the present analysis of non-obligatory control, the understood subject may well co-refer with a structurally represented argument, but syntactically speaking, as will be elaborated on in section 4.6, this is incidental. The relevance of this for immediate purposes is that on the present account the existence of the examples in (25) is expected; the understood subject gains its reference via a discourse rule that homes in on the most accessible antecedent (to be defined below), which can come via a number of sources, one of which is the phrase marker in which it sits. So the problem posed by Landau's examples is limited to explaining the Condition B violation in (24), which I will return to, after first demonstrating that a partial control analysis of interrogative complements generally, falls short and then how such an analysis for (25) in particular is problematic.

First, recall that Landau's realignment of interrogative complements under partial control means the infinitival subject's interpretation *must* at least include the matrix argument. Actually, we have already seen that this is not so in example (22), but here is another one:

(26)   I know how to stop your wife leaving. Make love to her every night.

The imperative in the second sentence makes clear that the interpretative subject of the infinitival in the first sentence is the addressee and this doesn't include its matrix subject. Note that this does not mean that the understood subject of an infinitival can

never take a matrix argument as its antecedent, only that it need not, which is sufficient to rule out a partial control analysis of such examples.

I now return to the Principle B violation

(27)   *John$_1$ wondered who PRO$_{1/2}$ to introduce him$_1$ to

Although the unacceptability of the above example is not in doubt, note that condition B does not interfere with all interrogative complements:

(28)   a)   John$_1$ knew what to buy him$_1$ in London

           =   x knew what y or y+ could/should buy x in London

           $\neq$ x knew what x or x and y could/should buy x in London

        b)   John$_1$ explained how to ignore him$_1$ when he was feeling moody

           =   x knew how y or y and z could/should ignore x

           $\neq$ x knew how x or x and y could/should ignore x

But in these grammatical examples, where the pronoun can refer to the matrix argument, the understood subject of the interrogative complement does **not** include the controller. So amelioration comes when we clearly separate referentially the infinitival's understood subject from the pronoun within, hence the absence of any Condition B violation.

The existence of examples in which interrogative complements can exclude the matrix argument as in (26) above, rule out a partial control classification of interrogatives as does the possibility of avoiding Condition B violations, by the same method, namely making sure that the understood subject does not co-refer with a matrix argument, as in (28)(a and b). On this basis, I consider the classification of interrogatives under non-obligatory control, rather than obligatory control, to be in

the right direction. With the delineation between non-obligatory control and obligatory control firmly in place, I turn now to how their distributional differences might be predicted.

4. 4 The Structural Restriction on Copying

What non-obligatorily and obligatorily controlled infinitivals have in common is that they both introduce an external theta-role. The principle of Full Interpretation requires the interpretative component (B), of this theta-role to have the content of a semantic argument. But obligatory and non-obligatory control differ from each other in how this is achieved. In the former relation, saturation of B occurs syntactically via the copying mechanism, in which B separates from A and percolates to an antecedent in the matrix clause. In the latter relation, however, its saturation is achieved by semantic means; B is specified as [+human] at the LF-interface and this specification may or may not then be supplemented by a discourse rule directing it towards a highly accessible antecedent. So in principle, there are two ways of specifying how the external theta-role will be interpreted in the semantics:

(29)   (1) Specify B as human

        (2) Copy B to (an antecedent in) the super-ordinate clause

(2) in (29) is simply the mechanism of percolation at work, such that a selectional requirement copies until it reaches a node on which it immediately dominates the property it seeks, so it is option (1) that needs to be regulated. In order to do so, we will assume a choice point at which option (1) above becomes available. For the moment, we will assume that this choice point to be tensed TP:

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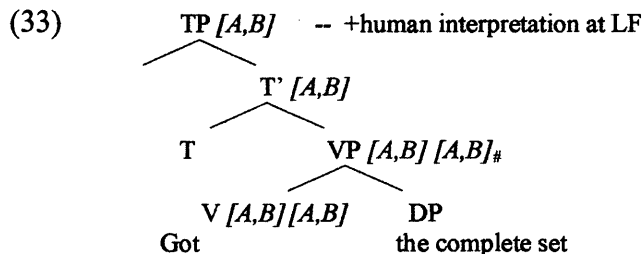(30)　At tensed TP:　*B* can be specified as + human

This will suffice for regulation of an external theta-role in an non-obligatory control infinitival clause, but we will see reason to modify this slightly in section 4.8, when we turn to internal theta-roles that are interpreted generically. The option in (30) is recursive, in that this option becomes available at every TP in the tree that is tensed.

The so-called 'diary drop' style in English may receive an account from the analysis developed here. Diary drop sentences carry their own tense (31) and their understood subjects seem to be restricted to being +human too (32):

(31)　a.　Got the complete set now

　　　b.　Went to the lecture on time but still couldn't follow it

(32)　a.　#Got bashed in the car park whilst I was in the supermarket

　　　b.　#Got thrown away by the dustmen before I could stop them[5]

If the option in (30) is freely available in finite TPs, the sentences above can be analysed as a consequence of the verb's external theta-role being a assigned +human specification at the interface:

(33)　　　　TP *[A,B]*　　— +human interpretation at LF

　　　　　　　　　T' *[A,B]*

　　　　T　　　　　VP *[A,B] [A,B]*#

　　　　V *[A,B][A,B]*　　DP
　　　　Got　　　　　the complete set

---

[5] These sentences are not grammatical under the interpretation such that 'the car' got bashed in car park in (a) or your thesis was thrown away by the dustman in (b).

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Interestingly, such sentences only appear to be possible in root environments. If the current analysis is on the right track and the option in (30) is freely assigned in finite TP, this restriction to root environments requires an account:

(34) a. Think I'd better go now

b. *I think better go now

c. *Think better go now

I return to this issue in the last section, because the account offered will also relate to the null-objects of Rizzi (1986).

4.4.1 Obligatory control and the copying of *B*

So much for the point at which option (1) in (29) becomes available, but it remains to refine the circumstances that determine when this option is chosen. Let us look at an obligatory control representation first.

In chapter 2, obligatory control materialised when an interpretative component of a theta-role, *(B)*, separated from its formal-licensing component, *(A)*, before CP. Separation of these components was regulated by the Elsewhere Principle:

(35) Given two competing rules, R1 and R2, which operate in two domains of application, D^1 and D^2, such that the D^1 forms a sub-set of D^2, then R1 will block R2 from applying in D^1.

This principle, through its preference for whole theta-role percolation, ensures that copying of B in isolation only occurs when whole theta-role percolation is impossible, such as across infinitival CPs. (see chapter 2, section 2.2.4). B percolates to the super-ordinate clause, identifying with the theta-role of the matrix verb that is destined for the controlling DP:

(36)

```
        TP [B]ᵢ
       /    \
    DP        T' [B]
            /    \
          T        VP [B]
                 /    \
               V        CP [B]
                      /    \
                    C        TP [A,B]
                           /    \
                                  T' [A,B]
                                 /    \
                               T        VP [A,B]
```
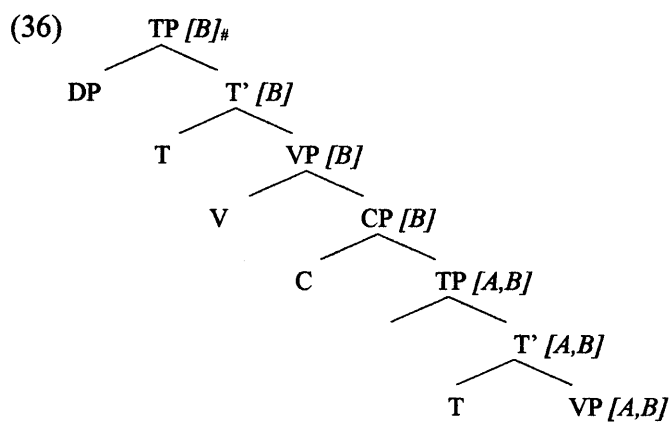
The *Elsewhere* Principle makes separation of B from A possible, because it is not possible to copy A across CP. But something extra needs to be said about how and why the theta-role goes beyond TP in the first place. In order for *Elsewhere* to become relevant in the structure above, it must be that the option in (30) is not chosen in obligatory control structures. But what determines this particular choice?
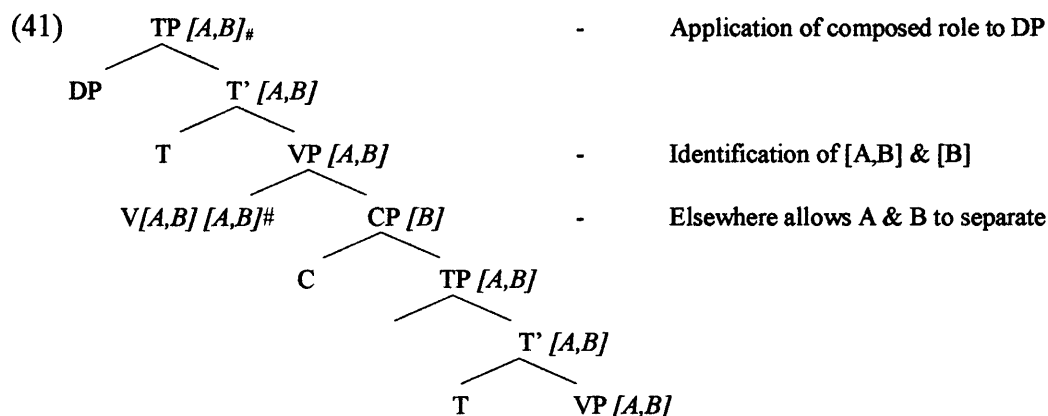
The reason lies with the obligatory control head's syntactic selection for a CP with an unassigned B:

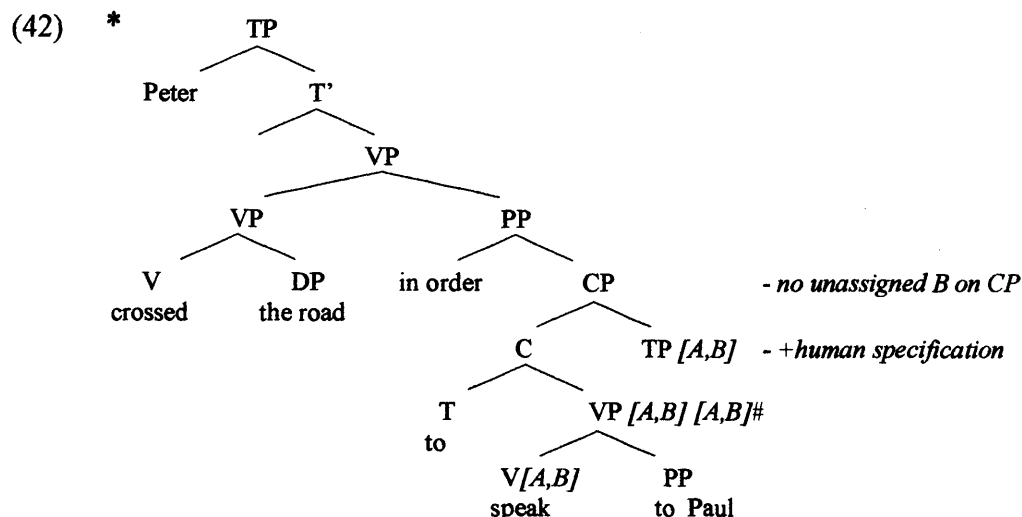(37)   Obligatory Control-type head selects for a CP with an unassigned B

The relevant structures for which such syntactic selection include subject-control structures, object-control structures and control structures headed by adjuncts:

(38)　Paul hoped to sleep well that night

(39)　Peter persuaded Paul to get a good night's sleep

(40)　Peter crossed the road (in order) to speak to Paul

In examples (38) and (39), it is the matrix verb that selects for an unassigned B in its CP-complement, whereas in example (40), it is the head of the adjunct that selects for the unassigned B. It is this selection by the controlling head in the super-ordinate clause for a B in its sister node that provides the pull for the copying of the unassigned B out of the embedded clause. The tree below shows the full representation for obligatory control, including the point at which *Elsewhere* allows for the separation of B from A, the identification of B with the matrix verb's theta-role and finally application of this theta-role to the controlling DP:

(41)　TP *[A,B]#*　　　　-　　　Application of composed role to DP

DP　　　T' *[A,B]*

　　T　　　VP *[A,B]*　　　-　　　Identification of [A,B] & [B]

V*[A,B] [A,B]#*　　CP *[B]*　　　-　　　Elsewhere allows A & B to separate

　　　　C　　　TP *[A,B]*

　　　　　　　T' *[A,B]*

　　　　　T　　　VP *[A,B]*

If the option in (30) were available at TP and instead of being copied out of its clause, B were attributed with the +human specification in the embedded clause, the saturated theta-role would not percolate further and the selectional property of the controlling head, for a CP with an unassigned B (see (37)), would not be met:

(42)   *   TP
          ╱╲
      Peter   T'
            ╱╲
           VP
        ╱──────╲
      VP   PP
    ╱╲   ╱──╲
   V   DP   in order   CP   - *no unassigned B on CP*
 crossed the road   ╱╲
                        C   TP *[A,B]*   - *+human specification*
                       ╱╲
                      T   VP *[A,B] [A,B]#*
                      to   ╱╲
                        V*[A,B]*   PP
                        speak   to Paul

The option in (30) allows for verbs that select complements without their being obligatory control structures. And such examples indeed exist; in the example below, the infinitival clause is a complement selected by *suggest*, but this is not an obligatory control structure, as the absence of any structurally represented antecedent attests:

(43)   John suggested [to leave at once]

   =   John suggested to me that I should leave at once

   or   John suggested to me that you should leave at once

The same rule predicts that any clause not selected in the relevant sense of (37) is not going to be obligatory control. And this is also true; properties of a subject are not selected (see esp. Marantz 1981) and control found in subjects is never obligatory.

With the structural restriction on copying in place we can now return to example (72) of chapter two, repeated here as (44). This example was used in Lasnik (1992) as evidence against a case-centred explanation of the lack of controlled objects. Recall

that the adverbial that intervenes between the matrix verb and the understood subject of the infinitival blocks case-assignment, yet 'PRO' is still rule out:

(44)   *John believes sincerely PRO to be clever

(Lasnik's 11 & 12)

But we can now attribute the ungrammaticality of this example to the category of the matrix verb with more confidence. *Believe* is not a control verb, which means it does not syntactically select for an unassigned B in its complement. Without the pull from a matrix control verb, the unassigned theta-role does not percolate beyond its clause.

In the next sub-section I turn to non-obligatory control, which in the main characterises those instances of control which are not selected by the matrix control verb. The only spanner in the works are interrogatives, whose complements are selected, but on closer inspection, we see that that copying in the sense of (37) above is absent. Essentially, we will see that the complement of a wh-expression must be an open proposition.

4.4.2 Non-Obligatory Control - no copying without selection of *B*

Recall that non-obligatory control structures, apart from interrogative clauses, are not complements, so their B-components are not selected for by control heads. Deferring discussion of interrogatives until last, these structures included infinitival subject clauses (45), verbal gerunds (46), control by implicit arguments (47) and long-distance control (48):

(45)   [To go to the lecture drunk] wasn't one of your best ideas

(46)   [Walking back home yesterday], a brick fell on my head

(47)   It is fun [to dance]

(48)   Paul said that [to get there on time] would be very difficult for him]]

In all these examples, the claim will be that the theta-role receives an interpretation within its clause. Recall the option in (30), repeated below. On economical grounds, this option, available in tensed TPs, should be taken. This is because copying derives a more complex structure, where what determines complexity includes the number of copies of theta-roles in a given structure. A structure with fewer theta-roles, therefore, is more economical, making (1) the preferred option:

(30)   At TP +tense, *B* can be specified as + human

Examples (45) and (46) are of a clause-initial infinitival subject and gerundive subject respectively, so their non-obligatory control characteristics follow straightforwardly. In both cases there is no pull from a control verb that causes the *B*-component to percolate beyond its clause, since the verb does not select for a clause with an unassigned *B*. In the absence of such selection then, the more economical option is preferred and the external theta-role of each clause is subject to the LF-interpretative rule that specifies the argument variable as [+human]. (We will return to this rule in more detail in section 4.5). Examples (47) and (48) also involve subject-clauses. The former is an example of extra-position, the latter that of an embedded subject within a complement, so again the fact that their external role is interpreted within the clause follows straightforwardly. In the next section, I turn to interrogatives and how to reconcile them with the rule in (30).

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4.4.3 Interrogatives: syntactic- versus semantic selection

Recall from (37), repeated below, that obligatory control verbs select for a CP with an unassigned *B*-component:

(37) Obligatory Control-type head selects a CP with an unassigned *B*

It is in virtue of the unassigned *B* component copying to the super-ordinate clause that the complements of obligatory control-verbs are predicates. In contrast, the infinitival verb in non-obligatory control clauses introduces a theta-role that gains a +human specification. In the absence of copying, therefore, the non-obligatory control infinitival clause is a proposition. But what of interrogative complements? These are selected for by their matrix verbs, but the wh-feature introduced by interrogatives must have a proposition with only one open position in its scope, namely that of the bound variable:

(49) +wh scopes over a proposition that contains a variable bound by the wh

The necessity that the interrogative complement be a proposition, as opposed to a predicate, comes from the fact that questions are only formed from propositions. A good precedent for this assumption comes from Karttunen (1977) for example. In this work, a question is formed in two steps. Briefly, the first step is that of constructing a "proto-question", which has an operator attached to the front of a proposition; in the second step, this proto-question is manipulated to make a real question. But crucial for present purposes, is that one can only make a proto-question out of a proposition, so everything which ends up as a question starts life as a proposition. (see especially Hamblin (1973) and Karttunen (1977)). Even in Groenendijk and Stokhof (1989) for

whom interrogatives do not always denote propositions (that is, they're not always of type t), interrogatives are always of a type made from s and t, i.e. nothing that indicates any missing arguments.

So there are potentially contradictory requirements at work here, in that there is a conflict of interest between what a control verb syntactically selects for, namely a CP with an unassigned B, which makes the complement a predicate, and what the wh of the interrogative requires semantically, namely that its complement be a proposition. To attribute C'/TP with both would result in a contradiction, since the infinitival cannot be simultaneously a predicate and a proposition:

(50)   * [unassigned B, +wh] → [predicate and proposition]

The alternative would be to say that verbs with interrogative complements, such as *know* in (22) select a CP, but not with an unassigned B. Without the pull from the matrix verb, the B-component of the external role introduced in the infinitival is not copied beyond TP, therefore, but specified as +human, which fits in well with their generic character and also falls in place with their non-obligatory control classification, as argued earlier.

In this section we have seen that one of the crucial respects in which obligatory and non-obligatory control differ is that obligatory comprises two components: the first is the controlling predicate's syntactic selection for a CP-complement with an unassigned B and the second is the copying of this unassigned B to the controlling argument in the super-ordinate clause, thereby binding the infinitival to the designated controller. It is the absence of this first component in non-obligatory control that is responsible for its different distribution: Infinitival subjects and gerunds have no higher predicate that could select for a B-component and

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interrogative complements do not make a syntactic selection for a CP with an unassigned *B*.

I turn next to the LF-interpretative rule, introduced in (6), which applies in all non-obligatory control environments, including those that have a generic interpretation, those whose interpretation comes from an antecedent in the structure and also those whose reference is determined by a specific inferred argument. I begin with infinitivals that are understood generically, as these constructions need no more than this rule for their interpretation.

4. 5 Generically Interpreted Infinitivals

We observed in section 4.3 a semantic restriction that held of non-obligatory control, but was suspended for obligatory control cases. This restriction was such that understood subjects of non-obligatory control clauses must as a bare minimum be +human. If in the syntax, there is an unassigned theta-role, then there is a semantic requirement on that theta-role to be interpreted as +human. The LF-rule that connects the semantic representation (where the argument is specified as +human) to the syntactic representation (the unassigned theta-role) can be formulated as follows:

(51)   LF-Rule: Unassigned θ-role is interpreted as +human

Application of this rule does supply the unassigned role with some referential content, albeit a rather sparse one. But for what non-obligatorily controlled environments does this specification suffice? It cannot be sufficient for cases of long-distance control:

(52)   Peter said that [[to get there on time] would be very difficult for him]]

Here the external role of the infinitival is referentially dependent on the fully specified antecedent in the matrix clause. So although there is no contradiction between an external theta-role with a +human specification and *Peter*, the rule that specifies the restriction on the variable is not sufficient for the theta-role's interpretation to be fully equated with the argument with which it shares its reference and all the features this argument bears. A +human interpretation also falls short for instances of implicit control in which the inferred argument refers to a specific discourse referent, in this case the speaker:

(53)   To finish off one sentence in peace would be nice

I return to both of these examples in section 4.7, where I argue that a discourse-governed rule supplements the +human interpretation. But for now, I return to where the sparse content provided by a +human specification is exactly what is required, namely generic contexts, one of whose very hallmarks is an omission of any referral to specifics. There is then, an accord between an external role that has a +human specification and a generically interpreted clause. It is the coincidence of these two factors, namely a +human interpretation and genericity, which occur with interrogative complements. What we will motivate in the next section is that although these complements' genericity is licensed by the presence of a generic operator at the semantic level, the +human specification is exactly the right amount of information for their interpretation. But a short introduction to genericity that will ground the claim precedes.

4.5.1 Genericity

Generic infinitival sentences do not express properties of any specific events or individuals; rather they refer to generalisations over events, referring to custom-like regularities:

(54)   To dance is fun

(55)   Dancing the tango is fun

In both the extra-posed sentence in (54) and the verbal gerund in (55), the interpretation is such that 'dancing is fun for people in general'. Adding a specific time reference guides away from the generic interpretation, leaving us with an expectation for a conversational cue to guide us to towards a referent for the individual(s) dancing:

(56)   a)   It was fun to dance yesterday

        b)   Dancing the tango on Saturday night was fun

The present account will focus on two types of clauses in which the understood subject can receive a generic interpretation: interrogative complements, as in (57) and so called 'implicit' control structures, as in (58).

(57)   Peter knew how to fix the head gasket
        =Peter knew how one could/should fix the head gasket

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(58)   To dance is fun

For both of these types of examples, there are two interpretative possibilities in need of attention, namely their generic interpretation, as evidenced in (57) and (58) above, and their specific interpretation, as in the examples below:

(59)   a.   John wondered whether to talk to himself in public

         b.   To finish off one sentence in peace would be nice

The reflexive in (a) forces an interpretation in which the understood subject is equated with the matrix subject, where as the circumstances surrounding the sentence in (b) strongly encourage an interpretation such that the wish expressed relates to the speakers own heart. I defer an account of these 'specifically' interpreted examples until section 4.6, focussing on their generic guises now.

The possibility of a generic interpretation comes about from the interplay of two factors; the unassigned +human theta-role is neutral in regard to a generic interpretation, whereas a modal operator at the semantic level fixes generic scope. In this respect, the present account gains much from Bhatt and Izvorski (1998), who link genericity to modality, although the account of control developed here differs from theirs in important respects (see chapter 1, section 1.2.4 and section 4.5.3 below). I look at interrogative complements first.

4.5.2 Interrogative complements

The understood subjects of interrogative complements do not take the overt argument in their super-ordinate clause as their antecedent. In the main, these subjects receive a generic interpretation, their nearest overt counterpart being *one*. But in addition to this understood subject having a reference distinct from the overt argument in the matrix, interrogatives have a modal feel to them, as demonstrated in Bhatt and Izvorski (1998), where they are matched to their nearest paraphrases: (Bhatt and Izvorski's 36 and 37):
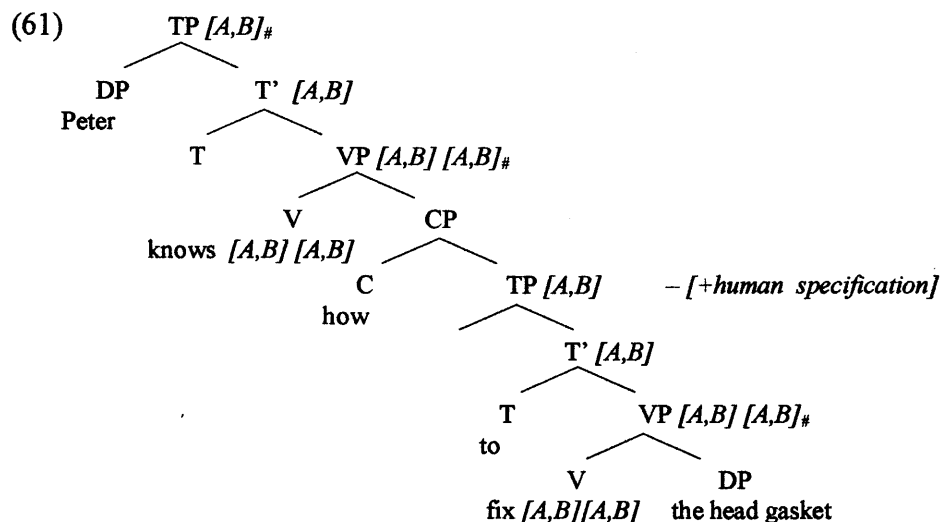
(60) a) Matt knows how to solve the problem

   a') Matt knows how one could/should solve the problem

   b) Daniel knows what to do with one's life[6]

   b') Daniel knows what one should/could do with one's life

Falling under the non-obligatory control category, the representation of interrogative complements proceeds as shown in (61): their external theta-role is copied up to TP, and in virtue of (51), it is attributed with a +human interpretation, repeated for convenience below:

(51) LF-Rule: Unassigned θ-role is interpreted as +human

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[6] This sentence is not available in my grammar, but another, attributed to Chomsky in Lebeaux (1984) which makes the same point is:

John asked Bill how PRO_{arb} to behave oneself under such circumstances

(61) TP *[A,B]#*

            /‾‾‾‾‾‾\
DP   T' *[A,B]*
Peter

           /‾‾‾‾‾\
    T   VP *[A,B] [A,B]#*

           /‾‾‾\
     V   CP
knows *[A,B] [A,B]*

           /‾‾‾\
     C   TP *[A,B]*   – *[+human specification]*
    how

         /‾‾‾\
        T' *[A,B]*

       /‾‾‾\
     T   VP *[A,B] [A,B]#*
   to

       /‾‾‾\
    V   DP
fix *[A,B][A,B]* the head gasket

Through this +human specification, a generic interpretation becomes possible. That is in the absence of any other rules, the result is a generic interpretation of that sentence. Having been specified, no further copying of the theta-role is motivated; it does not leave the infinitival complement in which it was introduced. Crucially, failure to copy the theta-role further, makes this complement a proposition, as is required by the wh-feature (see section 4.4.3.1). The generic operator, introduced by the hidden deontic modal, is of semantic consequence:

(62)   Peter knows [how to fix the head-gasket]

       → scope of genericity

Recall from section 4.4.2, despite the infinitival being a complement of the interrogative verb, the selection is not of the obligatory control-type. That is these verbs do select for a CP, but not a CP with an unassigned *B*. Such syntactic selection would render the complement a predicate, which would contravene the semantic requirement for the complement of the wh to be proposition.

4.5.3 Implicit Control

I return now to the example of 'implicit' control, in which an inferred generic argument is felt:

(63)   To dance is fun

Bhatt and Izvorski (1998) develop an account for examples such as these. Essentially, their claim is that *fun* has an implicit argument, itself generic and it is this that controls, and hence determines the interpretation of, the understood subject in the infinitival. In fact, they make the stronger claim that an arbitrarily interpreted PRO is *always* dependent on a generic implicit argument. So two factors in unison predict whether PRO can be interpreted generically: an implicit antecedent and that antecedent's genericity; neither on its own being sufficient. It is not completely clear whether the implicit argument on which PRO is dependent for its interpretation in their proposal is posited as a structurally represented one. The statement introduced about its whereabouts is open to a syntactic or a semantic construal:

(64) PRO_{arb} ↔ Generic implicit argument in the immediately higher predicate

(Bhatt and Izvorski's (19)

But the descriptive statement as formulated in (64) does not stand up empirically whether or not it refers to an implicit generic argument at the syntactic or the semantic level, as the following examples show:

(65) Bill: The headmaster just phoned

     Ben: What did he say?

     Bill: He said to introduce yourself to the class before he arrives.

            ('He said to me that you should introduce yourself to the class before he arrives')

If in the above example, the matrix verb *said* has an implicit argument, the reference of this argument is the speaker, *Bill*, which is not the antecedent of the interpretative subject of the infinitival clause, which is understood as the addressee, namely *Ben*. So the claim that arbitrary PRO is always referentially dependent on an implicit controller in the immediately higher predicate is too strong.

A weaker claim that takes away the bi-conditional in (64) and replaces it with a conditional can perhaps be upheld:

(66)   If there is an implicit argument then PRO co-refers with that argument

Thus amended, the above statement is sufficient to account for the interpretation of the infinitival's understood subject in (67). We will return to the generalisation in (66) in section 4.7, when we turn to the so-called 'linked-reading effect' observed in Lebeaux (1984).

(67)   To dance is fun

Note that, contrary to Bhatt and Izvorski (1998), examples such as (68) below, set against the indexical predicate in (67), do not prove that PRO_{arb} always has an implicit controller:

(68)   *To dance is certain/likely/sure

Certain and such predicates express the extent to which something is true or false, whereas *dance* expresses an activity. Since activities don't have truth values it is expected that the latter cannot be predicated of the former, making the example orthogonal to the issue of implicit arguments. If we were to pick an adjective which says nothing about truth, that predicate's combination with *to dance* improves:

(69)   To dance in tap shoes is noisy

The adjective *noisy* also has no implicit argument, yet the sentence still carries a generic reading. So an account of generically understood subjects in infinitivals does not necessarily depend on the presence of a generic implicit argument. The claim made here is that what contributes to the availability of a generic interpretation is the +human specification on the theta-role. And this is indeed true. Both of the constructions examined so far *allow* for a generic interpretation:

(70)   a)   It is fun to dance

[For people in general] [it is in general fun to dance][7]

b)   Paul knew how to fix the head gasket

Paul knew how one should fix the head gasket.

So the generic interpretation is not necessarily due to another generic implicit argument, but does it depend on anything else? If we look again at the example in (70), we can see that this sentence has a double layer of genericity. That is, there are two sources of genericity in this sentence, indicated by the brackets. We can prove that these two different sources exist by looking at the possible interpretations that the

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[7] I return to the double genericity of this structure below.

sentence in (70) can have. First, note that generics differ from universals in that the former allow exceptions, where as the latter do not:

(71)   a.   It is fun to dance

        b.   It is always fun to dance

In (a) above, *It is fun to dance* is a true statement even if we can think of an occasion when it isn't fun to dance (when a less than sober parent forces one onto the dance floor at a wedding, for example). The universal added in example (b) however, would not be a true statement if we could think of an occasion on which dancing would be less than pleasant. To test, therefore, whether the example in (70), repeated here as (72)a), has two sources of genericity, we can see if insertion of a universal before *people*, as in (b), or *fun*, as in (c), is tolerated. These examples indicate that exceptions are indeed possible in two places, since the interpretation of the sentence in (a) does not entail either (b), (c) or (d) below:

(72)   a.   For people in general it is in general fun to dance
        b.   For all people it is in general fun to dance
        c.   For people in general it is always fun to dance
        d.   For all people it is always fun to dance

What these examples show is that there are two independent sources of genericity in such an infinitival: the unassigned theta-role that is attributed with a +human specification and a generic operator, operating at sentence level. But although we have proved that the generic reading of the +human theta-role exists independently, there is reason to believe that this interpretation is still in need of licensing by a generic operator. There are no examples of a generic subject, for example, when the sentence in which it sits is not generic as a whole. Recall that insertion of an episodic marker makes a generic reading of the sentence impossible:
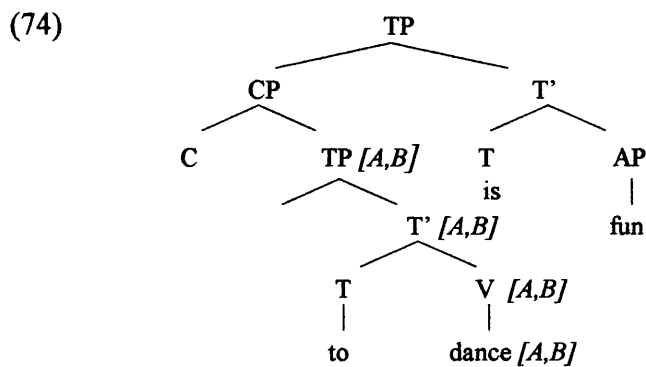
(73) It was fun to dance yesterday

≠ 'It was fun for people in general to dance yesterday'

What this effectively does is remove the matrix generic operator and with that the availability of a generically understood subject.

So it seems that when the whole structure is within the scope of a generic operator, the structure licenses the genericity of the understood subject, if that subject's specification is minimal. The +human specification that follows from the LF-rule, repeated below, qualifies as such:

(51) LF-Rule: An unassigned θ-role is interpreted as +human

The external role of the infinitival verb percolates to TP, the point at which the +human specification option becomes available (see (30)). With this minimal specification, the generic interpretation is made available, but through the generic operator at sentence level, the interpretation is licensed.

(74)

```
                        TP
              ┌──────────┴──────────┐
             CP                     T'
           ┌──┴──┐              ┌───┴───┐
          C    TP [A,B]        T        AP
              ┌──┴──┐          is        │
                  T' [A,B]              fun
                ┌──┴──┐
               T     V [A,B]
               │       │
               to    dance [A,B]
```

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The sparse nature of its specification makes it compatible with a generic reading, but will allow it to be enriched when a particular antecedent suggests itself, for example when an episodic marker is added:

(75)   To dance was fun yesterday

Notice that addition of an episodic marker, such as in the example above, which makes the event referred to specific, removes the possibility of a generic reading of the understood subject.

If the theta-role's specification were any more detailed, this specification might clash with those of the particular antecedent with which it might be subsequently linked. This argument is developed further in the next section, where we look more closely at the discourse metric that fleshes out the interpretation of +human theta-roles in non-generic contexts.

4. 6   Discourse-regulated antecedents

The inter-face rule introduced in section 4.4 supplies referential content to unassigned theta-roles in NOC-clauses via the +human specification. We saw that this rendered the theta-role compatible with generic readings, where minimal specification is required, but something more is needed for those instances in which the reference of the inferred subject is concrete. These include examples in which the inferred subject's antecedent is present in the structure (76), where its referent is mentioned in the discourse (77) and also when the referent is simply inferred (78).

(76)   John said that to get there on time would be difficult

(77)   Bill: That's what we should be doing

                Ben: What is?

                Bill: Sailing the seas without a care in the world

(78)   To finish off one sentence in peace would be nice

For such examples then, the +human attribution is not sufficient, but a pragmatically governed rule, which directs an underspecified argument towards a highly salient conversational cue for interpretation, is:

(79)   Discourse-Rule: An underspecified [+human] argument can only be co-
                        referential with a highly accessible antecedent

The decision as to what makes an antecedent highly accessible will be determined using a metric along the lines of that developed in Ariel (1988), in which it is shown that the weaker a referential dependent, the more salient its antecedent must be. I begin by motivating an extra-syntactic mechanism, before introducing Ariel's metric, which is then put to use on the data in question. I go on to provide evidence for this rule's extra-syntactic status before explaining how copying of B beyond non-obligatorily controlled infinitivals is barred. Section 4.7 demonstrates how the combination of these two inter-face rules can cater for what is often referred to in the literature as the linked-reading effect. The chapter concludes with section 4.8, by drawing a parallel between understood non-obligatory control subjects in English and the Italian null-objects of Rizzi (1986), suggesting that the latter are interpreted via the same rule. If correct, then this discourse-rule is not peculiar to non-obligatory control-'subjects', but has a broader relevance, moving it in the direction of a general grammatical principle.

4.6.1 Accessibility Theory and Antecedent Choice

Before leading on to an explanation of how a theory of Accessibility might work, it is worth noting why such a theory is needed in the first place. Syntactically speaking, non-anaphoric expressions are free, but in practice something in the discourse restricts them:

(80)   As for Ben's girlfriend, her mother can't stand h'r

The syntax allows us to construe the reduced pronoun *h'r* as distinct from the DP *Ben's girlfriend*, but the fact that they are understood as being co-referential means something extra-syntactic is regulating our use of referential expressions during discourse. That something is Accessibility, as developed in Ariel (1988), in which it is argued that the form/content of a (pro)noun instructs us as to how to link it to an antecedent. The basic idea is that the more information a (pro)noun encodes, the less obvious its antecedent needs to be and using this criteria (pro)nouns are ordered on a hierarchical scale. At one end are low accessibility markers, such as proper nouns; these would be used by a speaker who is unable assume that their addressee has any prior knowledge about who the speaker is referring to. So in the example below, where both (a) and (b) signify an initial communicative attempt, (b), which uses a proper noun, would be the most sensible choice of expression for a speaker that wishes to be understood:

(81)   a)   #He just left the room
        b)   Bill just left the room

Proper nouns then, are low accessibility markers, as are definite descriptions. The more lexical material an accessibility marker comprises, the lower on the scale it is, which makes sense given that each addition contributes more information for the addressee:

(82)   a)   The man just came into the room

       b)   The man with the heavy moustache just came into the room

       c)   The man with the heavy moustache that we bumped into yesterday just came into the room.

At the opposite end of the scale, lie high accessibility markers, which are those expressions used when a speaker can assume their addressee has immediate or easy access to their referent. In terms of saliency, 1st and 2nd person should make more accessible antecedents than 3rd person, since 1st and 2nd refer to the speaker and the addressee, both of whom are involved in the discourse to hand. And this is so. In the absence of any additional conversational cue, (83)c), in which a 3rd person is taken to be the person to whom the directions are addressed is decidedly odd:

(83)   a.   One tablet should be taken every four hours

       b.   'You should take one tablet every four hours'

       c.   #'They should take one table every four hours'

Being less obvious, or salient, in terms of Ariel's criteria, a 3rd person requires an additional pointer if it is to act as the referential source for an implicit argument, whose paucity of features make it a high accessibility marker (see (87)). A topic marker can act as such a pointer, for example, the overt marker, *as for*, which guides unambiguously to the referential source, as its ameliorative effect on (83)c) shows:

(84)   As for children under 12, ½ a tablet should be taken every four hours

Zero pronouns are the highest accessibility markers, always requiring highly accessible antecedents. The omitted subject of the diary-drop style of speech, as in (85) is strongly biased towards an interpretation in which it is understood to be the speaker of the discourse, namely the 1st person. Since the speaker of the discourse is the most accessible antecedent, any other interpretations, although compatible with the form of the verb, would be at odds with the contextual cues available and communication would fail. The sentences in (85) cannot be uttered, if the intended interpretations are as in (86).

(85)   Went to the lecture yesterday, but fell asleep before the end. Got a D for the essay.

(86)   #Jason went to the lecture yesterday. Susan fell asleep before the end. You got a D for your essay.

Given their absence of lexical material, the understood subjects of non-obligatory control-infinitivals must be at the top of the accessibility hierarchy, too. But where as those of obligatorily controlled clauses pattern with overt anaphors in that their referential sources are sought syntactically, the inferred subjects of non-obligatorily controlled clauses tally better with the restrictions on pronouns: there may or may not be a linguistic antecedent, but if present it need not be local or in any particular configuration. With these distinctions in mind, the following Ariel-based hierarchy of accessibility can be constructed, where (1) indicates markers of high accessibility and (5) low:

(87)   1)   null pronouns

        2)   clitics/weak pronouns

        3)   strong pronouns

        4)   definite descriptions

        5)   proper nouns

The factors which grade the referential forms above according to how accessible their antecedents must be include saliency, for example if their antecedent is marked as a topic, competition between referential candidates and distance between a (pro)noun and its referential source:

(88) a) Saliency   -   topicality

      b) Competition   -   presence/absence

      c) Distance   -   local/inter-sentential/intra-
                                 paragraph

4.6.2 Application of the Discourse Rule

Application of the principles behind Accessibility would guide interpretation of non-obligatorily controlled clauses in the following way. Recall first that the discourse rule, repeated below, restricts their interpretation to an antecedent that is highly accessible:

(89) Discourse-Rule: An underspecified [+human] argument can only be
                       co-referential with a highly accessible antecedent

Non-obligatorily controlled understood subjects are at the top end of the Accessibility scale in terms of their need for referential sources, lacking in lexical features as they do. They should then demand their referential sources to be highly salient, free from competitors and if present in the structure, closer than other potential candidates (88). The residual structures for which we must still account are long-distance control, verbal gerunds and non-generic implicit control cases:

(90) Peter said that [to get there on time] would be very difficult.

(91) Walking back home yesterday, a brick fell on my head

(92) To finish off one sentence in peace would be nice

Taking the long-distance control example in (90) first; the infinitival subject of the embedded clause does have one potential antecedent in the super-ordinate clause, marking it as the most accessible antecedent vacuously. There are no other competitors and *Peter* is the topic of the conversation, so a construal under which the understood subject is interpreted as a third unmentioned party, say *Paul*, is barred. If, however, *Paul* is mentioned in the discourse, then distance and salience regain significance:

(93) Paul was confident that he could attend the concert and still make it to the viva on time. Peter said that to get there on time would be very difficult.

Despite there being two competitors for the understood subject, and *Peter* being closer, the most salient, and therefore most obvious antecedent choice, is *Paul*, the topic of the conversation. But the sparse information provided in (93) does not absolutely rule out an interpretation in which both *Peter* and *Paul* for example, are the antecedents of the understood subject and this is exactly what is required from a pragmatically driven rule, which should guide, rather than direct absolutely. *Paul* remains the preferred, but both *Peter* and *Paul* together are a possible, option.

The verbal gerund repeated below can be accounted for in similar fashion. Again, there is a null-subject, making 1st or 2nd person, both of whom are present in the discourse to hand, most accessible and hence preferred antecedents. Addition of the first 1st person possessive pronoun in the following clause, however, provides the

crucial cue and we interpret the understood subject as 1st person (94)a) rather than 2nd (94)b).

(91)   Walking back home yesterday, a brick fell on my head

(94)   a)   Whilst I was walking back home yesterday, a brick fell on my head

        b)   #Whilst you were walking back home yesterday, a brick fell on my head

Lastly, the case of implicit control, where the implicit argument refers to someone specific, also follows from Accessibility Theory without complications:

(95)   To finish off one sentence in peace would be nice

The indexical predicate *nice* has an inferred argument which may or may not be represented structurally, but for present purposes it is enough that it is the only conceivable antecedent for the infinitival's null-subject, there being no other competitors.

4.6.3 Support for the Extra-Syntactic Nature of the Discourse Rule

Having illustrated how the combination of the discourse rule in (89) and Ariel's notion of Accessibility can regulate the interpretation of the unassigned external theta-role, this section ends with evidence for the extra-syntactic nature of this rule. Firstly, recall that the obligatory control relation comprises two key parts: the control verb's specification that determines which of its arguments act as controller and the

copying mechanism, which essentially carries out this direction, by linking the interpretative component of the infinitival's external θ-role to that of the antecedent in the super-ordinate clause. I have argued that non-obligatory control lacks this first component entirely, in that there is never a higher predicate that selects an NOC-clause in the way that obligatory control-clauses are selected. It is in the absence of such selection, that the discourse rule comes into play, by filling the reference of the underspecified external θ-role. This discourse-rule, however, should not be able to interfere with the interpretation of obligatorily controlled understood subjects, whose reference is regulated syntactically. The example in (99) suggests that is so. First, observe how the topic marker, *as for*, works. In example (96), *as for* marks *Peter* as the sentence's topic. Topic-hood makes *Peter* a highly salient prospective antecedent and so the external θ-role of the infinitival is directed towards it for its referential source:

(96)   As for <u>Peter</u>, the boss suggested to align <u>himself</u> with the union.

If demoted from topic position, however, *Peter* can no longer be the antecedent of the infinitival's understood subject, requiring a highly salient antecedent as it does:

(97)   *As for <u>Peter</u>'s sister, she suggested to align <u>himself</u> with the union.

Note that demoting *Peter* from topic position does not have any effect on an overt pronoun, which is expected; overt pronouns do not require an equally high accessible antecedent, so they do not need to link back to a topic:

(98)   As for Peter's sister, she suggested he align himself with the union.

Topic-hood also has no impact on obligatory control examples, showing that this extra-syntactic referential aid cannot interfere with a relation that is regulated syntactically:

(99)   *As for John$_i$, Mary promised him Θ_i to leave

Here, despite *John* being marked as the topic, it cannot be the antecedent of the infinitival. The control verb's specification that its complement is predicated of its external argument cannot be overridden: *Mary* must be the infinitival's interpreted subject.

This section and the one preceding it has offered two rules, which have collectively covered the interpretations in all the non-obligatory control structures documented. In all these structures, the external role of the infinitival clause is subject to the LF-interpretative rule through which the theta-role receives a +human specification. Generically interpreted clauses, among which are those with implicit arguments not modified by an episodic marker and interrogative complements whose subjects can be paraphrased as *one*, are subject to this rule alone. Long-distance control cases and implicit control cases that are interpreted specifically, are subject to the additional discourse rule, which supplements the +human specification. The rule, guided by Accessibility, as introduced in Ariel (1988), guides interpretation to a highly accessible referential source.

In the next two sections, we will show these rules in operation on two different phenomena. The first is the so-called linked reading effect, which describes the circumstance in which two infinitival clauses co-occur in the same sentence and the interpretation of the understood subject in the most embedded clause co-refers with that of the matrix clause. The second is the generic null-object in Italian, as described in Rizzi (1986). This null-object is of potential significance to the LF-rule introduced

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for understood subjects, since it implies that this rule operates on objects, too. The widening of this rule's applicability beyond that of understood subjects, takes the rule in the direction of a general grammatical principle.

4.7 The Linked-Reading Effect

When two non-obligatorily controlled clauses are combined in the same sentence, their understood subject must usually co-refer. Lebeaux (1984) provides some examples that demonstrate this linked-reading effect:[8]

(100) a) Θ_1 making a large profit as a slum landlord requires $\Theta_{1/*2}$ exploiting the tenants

  b) Θ_1 becoming a movie star involves $\Theta_{1/*2}$ being recognised by everyone

  c) Θ_1 to know him is $\Theta_{1/*2}$ to love him

In each of the examples above, the understood subject of embedded verb must be interpreted as identical to the understood subject of the uppermost verb. Despite there being a strong preference for such two subjects in the same sentence to co-refer, Rizzi (1986) contains the following example in which two arbitrary subjects may refer to different entities:

---

[8] With the current PRO-free analysis of control in mind, I use the theta-role notation (Θ) to indicate that it is the external theta-role that is relevant in this relation.

(101) It is difficult Θ_1 to hope that $\Theta_{1/2}$ winning the race will be easy

(Rizzi 1986 his 24d)

But it is not easy to produce such examples, in fact, once we factor out those verbs that centre around competitions, such as win, lose etc, the preference for a linked reading is very strong:

(102) a. #It's difficult Θ_1 to expect that Θ_2 reading the book will be easy

   b. #It's unwise Θ_1 to hope that Θ_2 bringing the train in on
       time will be easy

It could be that the example in (101) is more akin to that provided in Williams (1980), where for some speakers there need not be strict identity between the understood subject and its antecedent; it is sufficient that the antecedent include it:

(103) I_1 want Θ_{1+} to meet at 6.   (Adapted from Williams' 68)

Such constructions have more recently been labelled as partial control in Landau (1999). If one thinks of the way in which spectators of sport often include themselves when expressing how their team fared, the absence of an obligatorily linked reading in (101) might only be an apparent one:

104) Bill: How did Man-U do on Saturday?
      Ben: Ah, we was robbed. The referee had it in for us from the start...

Partial control constructions are looked at more fully in chapter five. For the moment, the above examples serve only to put a question mark over Rizzi's exception to the linked-reading effect.

What is noteworthy of the three original examples given in Lebeaux (1984), is the generic character of the examples; in the paraphrases below, the nearest overt counterpart to the null-subjects in each of the examples is the indefinite pronoun *one*:

(105)   a)   For one to make a large profit as a slum landlord requires one to exploit the tenants

       b)   For one to become a movie star involves one being recognised by everyone

       c)   ?For one to know him is for one to love him

Note also the interpretations that these generic pronouns have. They are also unable to refer to different entities, which must question whether the linked-reading effect is actually a 'control problem'. That said, the LF-rule introduced in section 4.5, repeated below, if applied to the unassigned external role of each infinitival in Lebeaux's original examples in (100), will serve to restrict the interpretation of the argument variable represented by each theta-role to +human:
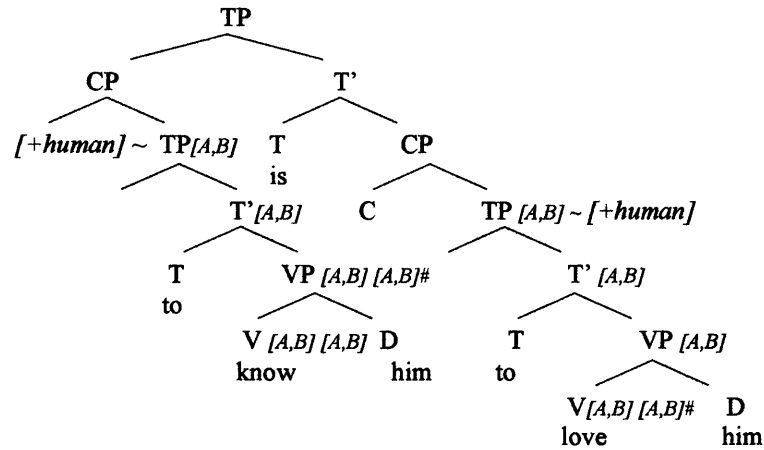
(51)   LF-Rule: Unassigned θ-role is interpreted as +human

At this point, with two minimally specified theta-roles, we need only recall the descriptive generalisation that held of implicit control, which was essentially a weaker version of Bhatt and Izvorski's, repeated below:

(106)   If there is an implicit argument than PRO co-refers with that argument

Translated into current terms, this would mean that the unassigned theta-role, which has been attributed with the +human specification, will share its reference with another unassigned theta-role if present:

(107)

```
                              TP
                    _____/    _____
                  CP                      T'
              __/    \__              __/    \__
      [+human] ~ TP[A,B]   T          CP
            __/    \__      is     __/    \__
        T'[A,B]            C    TP [A,B] ~ [+human]
      __/    \__                   __/    \__
     T         VP [A,B] [A,B]#    T' [A,B]
     to      __/    \__          __/    \__
        V [A,B] [A,B]  D        T         VP [A,B]
        know          him       to      __/    \__
                                    V[A,B] [A,B]#   D
                                    love            him
```

Note that if we provide a reference for the understood subject in the embedded clause in the examples in (102), the generalisation in (106) is no longer relevant

(108)   a.   It's difficult Θ_1 to expect that Θ_2 reading the book will be easy for Billy.

       b.   #It's unwise Θ_1 to hope that Θ_2 bringing the train in on time will be easy for British Rail

The reference of the understood subject is supplemented, as guided by Accessibility, with the result that it is no longer dependent on the interpretative subject in the matrix clause for its reference.

But does this leave Rizzi's exception to the linked reading effect without an account? Aside from the English example in (102), the exact identity relation being as yet

inconclusive, Rizzi (1986) shows that in Italian it is also possible to have two instances of arbitrary interpretations, whose references are distinct from each other. The example in (109)(a) has the possible interpretation given in (b)[9]

(109) a. È difficile [PRO$_{arb}$, sperare [che il governo possa autorizzare ___$_{arb}$,,

    a PRO vivere così

    'It is difficult[PRO to hope [that the government can authorise___

    [PRO to live like that]]]'

  b. 'It is difficult for x to hope that the government can authorise y to live like that'.

                 (Rizzi 1986 his 25b)

But again, note that a paraphrase of (109), which uses the overt counterpart of the null generic pronoun, *la gente*, may also have an interpretation such that the two pronouns are understood as being distinct from one another. The sentence in (110)a) can take (b) as one of its possible interpretations:

(110) a. È difficile per la gente sperare che il   governo   possa autorizzare
    is difficult for the people to-hope that the government could authorize

    la gente a vivere così'
    the people at live like-that.

    'It is difficult for people to hope that the government could
    authorise people to live like that'

  b. 'It is difficult for x to hope that the government could authorise y to

    live like that'.

---

[9] For evidence that this interpretation is one of real ambiguity, I refer the reader to the paper itself, in which Rizzi induces a Principle B violation when the two null-categories share governing categories.

Marco Tamburelli (pc) provides the following context in which such an interpretation becomes available: we are discussing how birds, unlike humans, are free because they can fly from one country to another without having to carry a passport. When I suggest that voters should only elect a government that includes this as part of their manifesto, you utter the sentence in (a) above, which could mean: It is difficult for people (i.e. voters in general) to hope that the government could authorise people (i.e. human beings) to live like that".

The availability of this referential dissociation is important because it again points to the linked reference between the understood subject and object being a problem that is orthogonal to control.

Syntactically speaking, the linked-reading effect is accidental and given that the rules of discourse guide us as to their interpretation, the existence of a minority of counter examples is exactly what is expected and desired from a such a rule, which should be set to prefer the norm, yet be sufficiently pliable not to bar the limited amount of deviance from this norm.

4.8   Null-Objects

So far, the interface rules that have been proposed for unassigned theta-roles have only been applied to external theta-roles. But there is no subject/object asymmetry intrinsic to the rules themselves, so they should be applicable to internal theta-roles that remain unassigned. Rizzi (1986) documents a series of constructions in Italian that look very much like unassigned internal theta-roles. These null-objects exhibit syntactic effects, making it clear that their theta-roles are projected. The LF-rule that

attributes external unassigned theta-roles with a +human specification can cater for the Italian null generic pronoun documented in Rizzi (1986). In fact, in certain circumstances, these null generic pronouns can become specific; this possibility is in line with guidance from the discourse rule, as determined by Accessibility. The broadened applicability of these rules, beyond that of understood subjects, transforms them from rules introduced for a particular construction to rules of general import to the grammar.

4.8.1 The Data

Implicit objects occur both in Italian and English:

(111) a) This leads (people) to the following conclusion

      b) Questo conduce (la gente) all seguente conclusione

(112) a) This sign cautions (people) against avalanches

      b) Questo cartello mette in guardia (la gente) contro le valanghe

(Rizzi 1986 his 1 & 2)

On the basis of these examples alone, it is not clear whether these implicit arguments should have a syntactic representation or not. But Rizzi (1986) provides 5 counts of evidence that the generic null pronoun of Italian is syntactically active, unlike its English counter part. Here I concentrate on two. In (113)a), we see that contrary to English b), Italian null objects can control:

(113) a)   Questo conduce ___ all seguente conclusione

       a')   Questo conduce ___ a [PRO concludere quanto segue]
               'This leads ___ to conclude what follows'

       b)   This leads ___ to the following conclusion

       b')   *This leads ___[PRO to conclude what follows]

                                              (Rizzi's 6b &d and 8b & d)

And the example in (114) shows that the null objects in Italian can also bind, whereas again, there is no English equivalent:

(114) a)   La buona musica riconcilia ___ con se stessi

       b)   Good music reconciles ___ with oneself

                                                      (Rizzi's   11)

The aim of Rizzi's work was to show that whereas the null pronoun in Italian is structurally represented and assigned a theta-role, the null pronoun of English is not projected and the relevant theta-role is saturated lexically. The relevance of this analysis for the present work is the status of the Italian pronoun. I argued in chapter 2 that purported evidence for the presence of a null-subject (PRO) in infinitivals can be reinterpreted as evidence for an external theta-role in that infinitival, even if that theta-role remains unassigned. I would now like to suggest that same argument be applied to the Italian null-object construction: the object properties evident in these constructions can reinterpreted in terms of the internal theta-role of the matrix verb.

This theta-role is what controls the reference of the understood generic subject in (113)a) in (114), it is the theta-role that is the antecedent of the generic reflexive:

(115)

θ_i

understood subject$_i$

reflexive$_i$
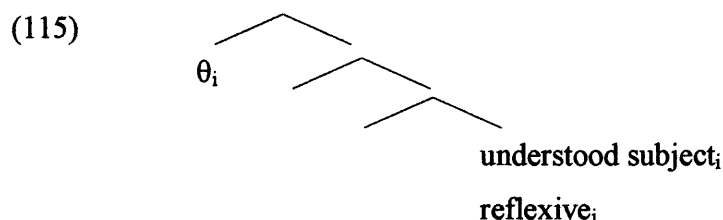
Under this analysis, the internal theta-role remains unassigned and there is simply no null-object projected to which it is applied. Without a direct object to which it can be assigned, the theta-role percolates to VP, its maximal extension. In order for this theta-role to be the antecedent of the understood generic subject in (113)a) and the generic reflexive in (114), it must be minimally specified. I would like to suggest that the same LF-interpretative rule that was introduced for the external theta-role of infintival clauses might apply to the internal theta-roles too:

(116)   LF-Rule: Unassigned θ-role is interpreted as +human

This would require a reformulation of the choice point at which the rule above becomes available. In section 4.4, this point was assumed to be TP:
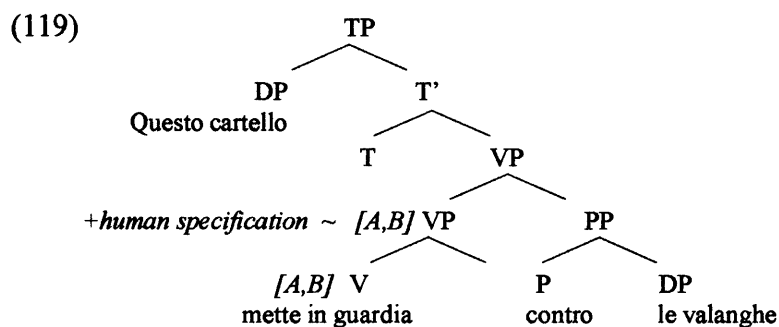

(117)   At tensed TP: B can be specified as + human

Since CPs block theta-role percolation (see chapter two), it follows that the maximal extension of the external theta-role is TP. The maximal extension of an internal theta-role, however, is VP. If we posit the maximal extension of a theta-role as the point at which the LF-interpretative rule becomes available, we can reformulate the rule in

(117), so that it generalises to external and internal theta-roles; for both 'null-subject' and 'null-object' cases, the option to interpret the theta-role as +human becomes available when that theta-role reaches its maximal extension:

(118) When a theta-role, [A, B], reaches its maximal extension, B can be specified as + human

In the tree below, the internal theta-role percolates to VP, at which point it is the subject to the interface rule, which attributes it with a +human specfication at LF:[10]

(119)

```
                        TP
                       /  \
                    DP      T'
              Questo cartello  /  \
                              T    VP
                                  /  \
    +human specification ~ [A,B] VP   PP
                           /  \       /  \
                      [A,B] V    P      DP
                   mette in guardia contro le valanghe
```

The proposal for internal theta-roles is only speculative so far, but it would be interesting to find out whether this +human internal theta-role can become specific, in the same way that it could for the +human external theta-role of non-obligatory control infinitivals in, as we saw in (110). If so, then the same discourse rule that applies to the understood subject of infinitivals generalises to that of understood objects; and if it extends to constructions beyond that of non-obligatory control infinitivals, it moves in the direction of the status of a general grammatical principle.

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[10] The tree shows only the thematic path of the verb's internal theta-role.

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Note that there is no obligatory control of objects, since this relation is licensed through copying, made possible by *Elsewhere*. If a theta-role *can* be assigned, separation of B from A will not be permitted by this principle. For the same reason, 'null-subjects' in finite clauses are ruled out:

(120)   *John$_1$ promised Mary Θ_1 would leave

There is in fact an independent reason for assuming that a null-object is not projected. This evidence comes from a theory of pro-drop developed in Neeleman and Szendrői (to appear in Linguistic Inquiry). In this paper, languages are shown to follow one of two patterns: either they show verb-object agreement, in which case pro-drop of objects is licensed, or they have overt objects that have a specific form. Aside from Italian, there have been no exceptions to this pattern. Italian does not exhibit verb-object agreement and it is also not an agglutinative language, meaning its arguments do not have specific forms in the relevant sense. Either Italian is a real counter example then, or its null-object is more accurately described as an unassigned internal role that receives its +human, and hence generic specification by the LF-rule as argued here.

4.9   Summary

This chapter has demonstrated the non-syntactic properties that pervade non-obligatory control structures, interrogative complements included. On the basis of its distinction from obligatory control in this respect, an extra-syntactic analysis was developed, such that all external theta-roles of non-obligatory control infinitivals were subject to an LF-rule that would ensure they be interpreted as arguments in the

semantics. But this specification was minimal, namely +human, which catered for all non-obligatory control structures whose interpretation was generic. A further discourse rule was implemented on top of the LF-rule, for those structures whose understood subjects had a fully fleshed out interpretation. The distributional differences between obligatory- and non-obligatory control were explained by the additional component operative in obligatory control structures, namely that they contain a control verb that s-selects a CP with an unassigned B. Their predicate status fell out from the copying of the unassigned B out of the embedded clause. In section 4.7 and 4.8, I asked whether the two rules introduced in this chapter for non-obligatory constructions was limited to these constructions or if they might be at work elsewhere; in section 4.7, they were set to work successfully on examples that exhibited the linked-reading effect. It was noted, however, that this effect is not peculiar to control, since the same phenomenon existed with overt generic pronouns in English. In the final section, I introduced a possible alternative analysis for the null-objects of Rizzi (1986). The properties of these null-objects were also reinterpreted in terms of the internal theta-role, as opposed to a structurally represented, yet null, argument.

In the next chapter, I turn to Partial Control, a phenomenon analysed fully in Landau (2000). The chapter sketches a way in which partial control might be tackled using the system developed so far.

Chapter 5

Partial Control

5.1 Introduction

Partial control has received its first detailed analysis in Landau (2000). In this work, such constructions are shown to conform to the properties of obligatory control in all relevant respects. But they differ in one crucial way, namely that although the understood subject in the infinitival clause must include the matrix controller within its reference, it can refer to additional individuals not necessarily represented in the structure. Thus the understood subject in the infinitival below is said to be plural and therefore to exceed that of its controller in the matrix clause:

(1)   The chair$_1$ decided Θ_{1+} to gather at six

It has been quite difficult to get a real feel for these constructions, since all but the original example first noted in Williams (1980), are not part of my grammar:

(2)   I$_1$ want Θ_{1+} to meet at six

And even in this case, I'm not sure that its acceptability hasn't more to do with the missing object implied by a verb such as *meet*. But Landau (2000) provides detailed evidence that partial control is a cross-linguistic phenomenon, available in German, Spanish, Italian and French and Hebrew. If so, then partial control needs to be incorporated into a framework for control in a principled manner. Part of this chapter will focus on ascertaining how productive this construction is. Section 5.2 will begin by looking at the type of matrix verbs that allow partial control, as well as the class

of verb that must be in the embedded clause for such a reading to surface. Interrogatives will be omitted from the partial control category, contra Landau (2000). These were shown in chapter four to fit more accurately within the non-obligatory control category. With the classes of verbs that license partial control in place, I turn in section 5.2.2 to the tense properties of the complements of partial control verbs. They will be shown to carry independent tense, in contrast to their non-partial control counterparts. As in Landau (2000), their independent tense will be used later to predict the availability of partial control, although the implementation to be developed here differs considerably from that of Landau's own. Section 5.2.3 sets out some examples of partial control in American English, with a view to showing that these constructions conform to the criteria necessary for them to be placed in the obligatory control basket. I will then illustrate properties that set them apart from obligatory control as traditionally understood, namely that the understood subjects in these infinitivals must be +human and that they can include in their reference individuals not structurally represented. The former property, as we saw in chapter one, is a condition that holds of non-obligatory- rather than obligatory- control constructions and the latter aligns them with pronominal relations, where such semantic up-stepping occurs. In section 5.2.4,

we will focus on some of Landau's own examples, first in English and then in German. The results of a small pilot study of these test sentences will indicate that partial control seems to be quite a restricted phenomenon, unavailable to a large proportion of the speakers asked. On the basis of these results, the present account will seek to incorporate two grammars into the mechanism adopted for a representation of partial control, one for the speakers who accept the construction and one for those speakers who reject it.   In section 5.3 I sketch out a proposal based on the method of theta-role percolation adopted here. It will take on board both the ambiguous properties that pervade these constructions and their restricted acceptability. More specifically, partial control will be argued to be both obligatory- and non-obligatory-control. As must now be expected the approach will not utilise PRO.

5.2 The Data

5.2.1 Verbs that allow Partial Control

Partial control seems to be a marked phenomenon for many speakers of English and for the small sample of native German speakers with whom I conferred (n = 5). In what follows, I will stick in the main to Landau's original examples as I am unable to construct my own and have not found sufficient speakers of standard English, who consistently accepts these examples either.[1] Landau identifies four classes of verbs that *allow* partial control. In (3) below, I illustrate each class, followed by an example sentence for each:

(3) Factive: John hated to solve the problem

Propositional: John claimed to have solved the problem

Desiderative: John hoped to solve the problem

Interrogative: John wondered how to solve the problem

(Landau's (28))

In chapter four, it was shown that a partial control analysis for interrogatives was incorrect. To disprove this cut it was only necessary to show that interrogatives need not include the matrix controller. I repeat one of the telling counter examples below:

(4) I know how to stop your wife leaving. Make love to her every night

For the imperative that follows the first sentence to make any sense, the understood subject of the interrogative clause cannot include the matrix subject, since the imperative places some kind of order on its addressee, the 2nd person, and certainly

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[1] 'Standard' English represents the English spoken in England to avoid the misnomer, 'British English', which does not represent any identifiable class of speakers.

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not the 1st. So the unassigned theta-role must be referentially distinct from the matrix subject, as indicated by the indices below:

5) I_1 know how $\Theta_{2/arb}$ to stop your wife leaving. Θ_2 make love to her every night

A further reason for assuming a non-obligatory control analysis was the absence of Condition B effects in some (but not all) interrogative clauses:

6) $John_1$ knew what to buy him_1 in London

Apart from the irrelevant reading that the example above can have, where *him* refers to a third party, there is also the reading such that *John* knew what one could buy *him*, namely *John*, in London. Condition B does not, therefore, block this construction, because the pronoun is not locally bound. A +human specified theta-role intervenes between it and the subject in the matrix clause with which it shares its reference.

Thus we will amend the list in example (3), by removing the class of interrogatives, thereby restricting ourselves to the first three classes of verb:

(7)   Factive: John hated to solve the problem

        Propositional: John claimed to have solved the problem

        Desiderative: John hoped to solve the problem

So far, the example sentences given look very much like ordinary cases of obligatory control. It is not until we modify the class of predicate in the infinitival that the partial control reading surfaces. The relevant reading materialises when this predicate is of the collective type, primary examples being *correspond*, *meet* and *convene*. Let us then insert these predicates into the infinitivals of the examples sentences in (7) to illustrate the possibility of a partial control reading:

8)	Factive:	John$_1$ told Mary he hated Θ_{1+} to correspond regularly

	Propositional: Mary said that John$_1$ claimed Θ_{1+} to have met at one

	Desiderative:	John$_1$ told Mary that he hoped Θ_{1+} to convene later

In these sentences, the reference of the understood subject in the infinitival clause, here represented by the external theta-role, is said to be able to exceed that of the subject with which it is indexed. That is, it can refer back to *John* in addition to other individual(s), which may or may not be structurally represented. The extent to which these examples are grammatical is unclear to me, not having found speakers of standard English that readily accept them. Their level of acceptability is of relevance, since it will bear directly on how we wish to represent partial control in our framework of control; we not only need to incorporate its availability, but also its unavailability to many speakers. I turn to this issue in the next sub-section.

5.2.2 Availability of Partial Control in English and German

As a first step toward ascertaining how productive the partial control construction is, I have taken a sample from Landau's own examples from speakers of American English and conducted a pilot study on a small sample of native speakers of standard English. The relevant sentences follow:

(9)	The chair$_1$ decided Θ_{1+} to convene during the strike

(10)	John$_1$ told Mary that he intended Θ_{1+} to separate before it's too late

(11)	Mary said that John$_1$ wished Θ_{1+} to correspond more often

(12)	Mary learned that John$_1$ was ready Θ_{1+} to fight together

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These examples were checked with seven native speakers of standard English. Each speaker was asked to indicate the status of the sentence using the following criteria:

13)   *   = ungrammatical

   ??   = very marginal, but not absolutely out

   ?   = marked

   OK   = grammatical

Below is a table which represents the frequencies for each judgement:

(14)   **Table 1   The judgements of seven native speakers of English on four partial control sentences from Landau (2000).**[2]

(n =7)	Level of Acceptability			
	*	??	?	OK
Judgements for sentence (9)	5			2
Judgements for sentence (10)	5	2		
Judgements for sentence (11)	4	2	1	
Judgements for sentence (12)	6		1	

As the table indicates, the results are such that most speakers in the sample found all four sentences ungrammatical. One sentence was judged to be completely grammatical and this by a minority of two speakers.[3] Let us suspend comment until we have looked at German, a second language which is documented to license

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[2] The judgements displayed come from the following native speakers of standard English: Nick Allott, Annabel Cormack, Vikki Janke, Mary Pearce, Neil Smith, Rob Truswell and Reiko Vermeulen.

[3] One of these speakers added that the reason they found this sentence ok, had more to with an inferred object that they felt rather than there being a plural PRO.

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partial control. Again, I have taken four of Landau's own examples from Landau (2000) and received judgements from a small sample of native speakers (this time five) to get a feel for the general felicity of this construction. The sentences follow below, after which I display the results in Table 2. The infinitivals of the first two sentences are complements to factive verbs, whereas those in the latter two are complements to propositional verbs. Where possible, I have indicated their nearest translations in addition to the glosses that accompany Landau's original examples:

15)   Hans sagte der Maria dass er es bedauerte   letzte Nacht gemeinsam
        Hans told   Maria that he it regretted   last   night   together

    gearbeitet zu haben
    worked to have

    'Hans told Maria that he regretted their having worked together last night'

16)   Der Verteidigungsminister   vergass sich schon zweimal   im Schloss
        The defence minister   forgot self already twice   in the castle

    versamelt zu haben
    gathered to have

    '??The defence minister has forgotten twice already to gather in   the castle'

17)   Maria hat gehört dass Hans   überall herumerzählte   die letzte Nacht
        Maria has heard that Hans   everywhere around-told   the last night

    gemeinsam   verbracht   zu haben
    together   spent   to have

    'Maria has heard that Hans is spreading it all around that they spent last night together'

18)   Maria hat gehört dass Hans behauptet hat die Lösung gemeinsam
        Maria has heard that Hans claimed has the solution together

    gefunden zu haben
    found to have

'Maria has heard that Hans has claimed that they found the solution together'

(Landau 2000 his 53a,b,56a &b)

(19) **Table 5.2 The judgements of five native speakers of German on four partial control sentences from Landau (2000).**[4]

(n = 5)	**Level of Acceptability**			
	*	**??**	**?**	**OK**
Judgements for sentence (15)	-	-	-	5
Judgements for sentence (16)	5	-	-	-
Judgements for sentence (17)	1	4	-	-
Judgements for sentence (18)	-	-	5^5	

As Table 2 shows, the first sentence was judged to be grammatical by all speakers, the last was considered marked by all five, where as the middle two were either completely ungrammatical or highly marginal for all speakers concerned.

Now given the paucity of the samples and informants for both the English examples (n = 7) and the German (n = 5), we cannot draw any strong conclusions from this pilot study, although the results do suggest that these sentences should be given to a larger test population to see if the direction in which these results point are significant. On its own, the pilot study leaves us with a question as to how productive partial control is in standard English, since only the first of the four examples was judged grammatical and this by only two of the seven speakers asked. Of the judgements in the German examples, two of the four sentences given were

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[4] My thanks to the following speakers for their judgements: Dirk Bury, Nicole Dehé, Imogen and Tilman Janke and Robert Pfaudler.
[5] For one of these speakers there was a strong preference for *gemeinsam* (together) to refer to *Hans* and an unmentioned third party, rather than *Hans* and *Maria*.

judged to be either grammatical or marked, (?), by all five speakers, whereas the remaining two were ungrammatical or highly marginal for all speakers, perhaps indicating that partial control is more readily available in this language.

One possibility that comes to mind regarding this data is that the plural reading available in partial control constructions is in fact an issue orthogonal to control. To what extent, for example, do the verbs used in the sentences in (9) to (12), repeated here as (20) to (23), license plural readings in non-control environments? The examples in (24) illustrate:[6]

(20)   The chair$_1$ decided Θ_{1+} to convene during the strike

(21)   John$_1$ told Mary that he intended Θ_{1+} to separate before it's too late

(22)   Mary said that John$_1$ wished Θ_{1+} to correspond more often

(23)   Mary learned that John$_1$ was ready Θ_{1+} to fight together

(24)   a.   The chair convened during the strike

       b.   John separated before his marriage became unbearable

       c.   John corresponded regularly

It is not without consequence to check the status of these constructions, since its productivity will help determine how we should account for its availability in our grammar. In Landau (2000), a singular subject with such a collective verb is ruled out:

(25)   *John met at six   (his (1a, p27))

At this point, the status of partial control constructions in English and German remains unclear. But Landau (2000) provides many judgements from very diverse languages, including Hebrew and Catalan, all of which point to partial control being

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[6] The example in (23) has been omitted because of the plural reflexive in the infinitival clause. Similarly, I have not included the German examples because three of the four examples also have a plural reflexive, (gemeinsam) and the remaining example was rejected by all informants.

a real phenomenon. For this reason, theories of control that omit partial control cannot be considered complete and in section 5.3, I sketch out a way in which the grammar of those speakers who reject partial control and those who accept the construction can be incorporated into the system of theta-percolation developed here. But before that I turn to a property peculiar to partial control complements, namely the independent tense that they bear, an observation due to Landau (2000).

5.2.3 Linking Partial Control to Tensed TP

One of the crucial respects that partial control constructions differ from their non-partial counterparts is in the tense properties of their complements. The former constructions can have complements whose tense differs from that of the matrix clause, as the contrasting time adverbials in each clause demonstrate:

(26)   a. Yesterday, John hoped to solve the problem tomorrow   (desiderative)

       b. Today, John regretted having kissed his aunt last week   (factive)

       c. Today, John claimed to have lost his car keys last week   (propositional)

(Landau's 91 & 94)

Non-partial control verbs do not display this option. A time adverbial in the complement that conflicts with that in the matrix clause renders the sentence ungrammatical:

(27)   a.*Yesterday, John began to solve the problem tomorrow   (implicative)

       b.*Yesterday, John had to solve the problem tomorrow   (modal)

       c. *Today, John managed to have finished his duties   (aspectual)

       yesterday.

With this evidence we can assume that partial control complements have their own tense, whereas non-partial control complements do not:

(28)   Partial control complements: TP = + tense

        Non-partial control complements   TP = - tense

This will become important in section 5.3, where availability of partial control is linked to this presence of tense. But first, I return to the properties of partial control, noting two that are at odds with the core diagnostics for obligatory control introduced in chapter one.

5.2.4 Properties of Partial Control

The conditions to which obligatory control must adhere will by now be familiar. These include: c-command, the need for a theta-supporting antecedent, locality and a ban on split antecedents. Given the thin line between split antecedents and partial control, I suspend this property for now, concentrating only on the first three. In (29), I have used the desiderative verb *refuse*, which falls within the partial control class (see (8) above), to show that these constraints do regulate partial control. In 29)a), we see that an expletive, which receives no theta-role, cannot be a controller. In (b), locality is contravened, where as example (c) breaks c-command:[7]

(29)   a.   *It was refused to meet at six

        b.   *Bill thinks it was refused to meet at six

        c.   *Bill's aunt refused to meet at six

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[7] A reader may wonder how these properties can be ascertained by a speaker for whom the construction is unavailable, but such constructions can be *understood*, yet deemed ungrammatical. See Landau (2000) for further proof that partial control falls on the side of the OC-boundary.

Although partial control conforms to the above conditions, which we expect if the relation is a sub-species of obligatory control, as argued in Landau (2000), it also exhibits properties at odds with this classification. Firstly, the ability of the understood subject in partial control complements to include more than the controller in its reference is absent in non-partial obligatory control constructions, as the contrast between the sentences in (30)a) and (b) shows. Such semantic up-stepping is a property it shares with non-obligatory control and pronominal relations. In the former relation, semantic up-stepping can be seen by using a non-obligatory control example that houses an antecedent, as in (30)(c). In the latter, such semantic up-stepping is the norm:

(30) a.   *Ben_1 managed Θ_{1+} to solve the problem   (Non-Partial Control)

      b. Ben_1 decided Θ_{1+} to solve the problem together   (Partial Control)

      c. Θ to have gone to the party together would have made John more

           confident.   (Non-Obligatory Control)

      d. Ben_1 said that $they_{1+}$ would return later   (Pronoun Relation)

But in pronominal relations semantic down-stepping is also possible, as in (31)a), an option unavailable to partial control and non-obligatory control.

(31) a.   We decided that I should solve the problem alone

      b.   *The $committee_{1+}$ decided Θ_1 to meet tomorrow

      c.   *Θ_1 to have gone to the party alone would have made [John and

           $Mary]_{1+}$ angry

As can been seen from (31)b), the understood subject of a partial control complement cannot refer to only a sub-part of its antecedent. And in (c), we see that when an understood subject in non-obligatory control clause does have an

antecedent, albeit not in any restricted configuration, the reference of the antecedent cannot exceed that of the understood subject. So although partial control shares the property of semantic up-stepping with pronominal and non-obligatory control relations, both partial control and non-obligatory control cannot engage in the semantic down-stepping that is characteristic of pronominal relations, suggesting that the parallel between pronouns and partial control is not extensive.

Partial control does, however, exhibit a further property that sets it apart from core obligatory control cases, but in line with non-obligatory control. This is that the understood subject of partial control complements must be + human. We saw in chapter one that this semantic requirement is not operative in obligatory control. I repeat two of the relevant examples below. For both the subject-control example (as in (32)a)) and the object-control example, as in (b), the understood subject in the infinitivals complement happily takes a non-human antecedent:

(32) a.   The documentary$_1$ tries Θ_1 to convey a humane side to Pol Pot.

  b.   The farm needed the crop$_1$ Θ_1 to exceed last year's quota

Since partial control verbs overlap with the obligatory control category, we expect to be able to construct examples using such verbs with non-human subjects. And this is indeed possible:

(33) a. The book$_1$ promises Θ_1 to be a great read   (desiderative)

  b. The documentary$_1$ claimed Θ_1 to have been impartial   (propositional)

But note that as soon as we choose non-human subjects, the semantic up-stepping of the understood subject that characterises such constructions, becomes unavailable:

(34) a.   *The book$_1$ promises Θ_{1+} to be a great read

  b.   *The documentary$_1$ claimed Θ_{1+} to have been impartial

The generalisation emerging is that in order for partial control to be an option, the understood subject must be +human:

(35)   Partial control available iff understood subject is human

To sum up what this section has shown, the properties of partial control do include the set of those that regulate obligatory control, but there are two additional aspects to partial control that set it apart from its obligatory cousin and syntactic dependencies generally: the reference of the understood subject can exceed that of the controller and the understood subject must be +human. These latter two properties tally with those evident in pronominal and non-obligatory control relations respectively. In the next section, we will try and integrate these ambiguous properties that partial control exhibits into the framework of control developed here. In short, partial control will be analysed as Obligatory + Non-Obligatory Control.

5.3   Partial Control as Obligatory AND Non-Obligatory Control

In the previous chapter, I introduced a rule that operated in both obligatory and non-obligatory control constructions. This rule pertained to the external theta-role of infinitivals and specified a particular stage at the theta-role could be sent for interpretation at LF. If sent for interpretation, the theta-role was specified as +human and non-obligatory control was a result. If this option were not chosen, the theta-role's *B* component was copied out of the embedded clause and the theta-role's reference was dependent on the antecedent in the super-ordinate clause to which it was ultimately applied:

(36)   (1) Specify *B* as human
         (2) Copy *B* to (an antecedent in) the super-ordinate clause

Recall that option (2) is simply the mechanism of percolation at work, such that a selectional requirement copies until it reaches a node on which it immediately dominates the property it seeks. In order to regulate option (1) we assumed tensed TP to the choice point at which this option becomes available.

(37)   At TP +tense B can be specified as +human

The LF-rule that operated in accordance with the option made available above was stated thus:

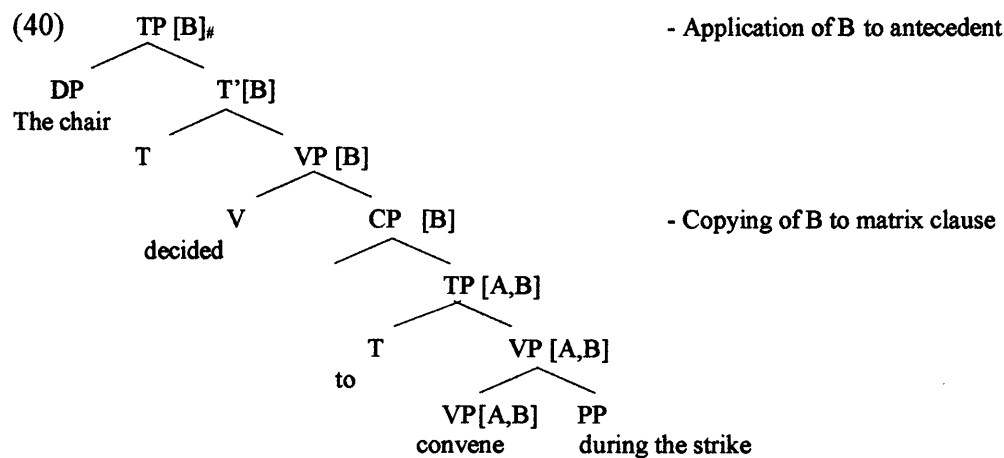(38)   LF-Rule: Unassigned θ-role is interpreted as +human

Although the copying mechanism and LF-rule covered obligatory and non-obligatory control relations respectively, the partial control phenomenon raises the question as to which of these options should regulate this relation, which exhibits properties from both of these relations. In fact, neither copying nor the LF-interpretative rule is sufficient on its own. Let us see why, using one of Landau's partial control examples:

(39)   The chair$_1$ decided Θ_{1+} to convene during the strike
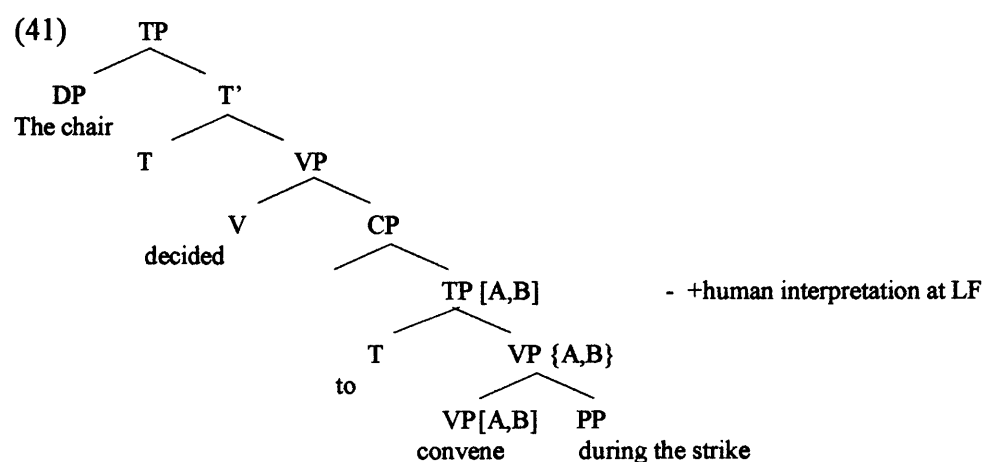
(Landau's (45a))

If the interpretative component of the theta-role introduced by the infinitival verb were copied out of the embedded clause, it would collapse with interpretative component of the matrix verb's external theta-role and ultimately be applied to the subject in the super-ordinate clause:[8]

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[8] As before, for ease of exposition I show only the path of the embedded theta-role complex

(40)   TP [B]#   - Application of B to antecedent

DP   T'[B]
The chair
        T   VP [B]

            V   CP [B]   - Copying of B to matrix clause
        decided
                        TP [A,B]

                    T   VP [A,B]
                    to
                        VP[A,B]   PP
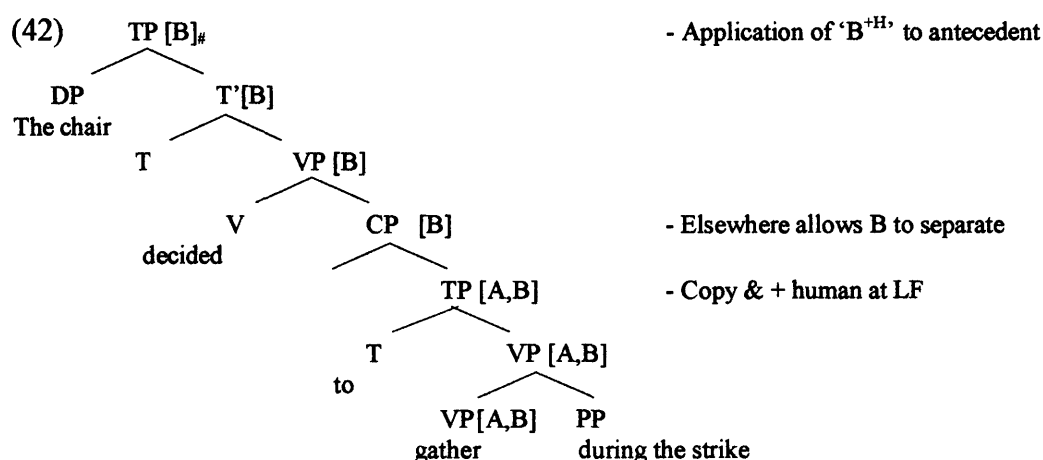   convene   during the strike

But on application to this controller, the reference of the theta-role would be limited to that of the controller. So the only relation that this copying procedure could achieve is one of identity. Yet the reference of the understood subject in a partial control construction exceeds that of its controller, as the index on the external theta-role in (39) indicates, leaving the extra referential component that the understood subject has without a source.

Application of the option in (37) fares no better. If the external theta-role is sent for interpretation at TP, it is specified minimally, namely as +human:

(41)   TP

DP   T'
The chair
        T   VP

            V   CP
        decided
                        TP [A,B]   - +human interpretation at LF

                    T   VP {A,B}
                    to
                        VP[A,B]   PP
                        convene   during the strike

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But this specification isn't sufficient either since the reference of the understood subject in (39) is much richer; it refers to the antecedent in the matrix clause and additional unrepresented individuals(s). In addition, since the theta-role does not leave the infinitival clause, no syntactic link can be established between the theta-role and the controller.

What would provide an adequate representation of partial control is a combination of the option in (37) in addition to the copying mechanism. The implementation of this option can be seen in the tree in (42), which puts it to work on the partial control sentence in (39):

(42)　　TP [B]#　　　　　　　　　　　　　 - Application of 'B^{+H}' to antecedent

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(42)      TP [B]#                          - Application of 'B⁺ᴴ' to antecedent
         /      \
       DP       T'[B]
    The chair   /    \
             T        VP [B]
                     /     \
                    V       CP  [B]         - Elsewhere allows B to separate
                 decided   /    \
                          TP [A,B]          - Copy & + human at LF
                         /     \
                        T       VP [A,B]
                       to      /      \
                          VP[A,B]      PP
                          gather    during the strike
```

The external theta-role introduced by the verb in the embedded clause percolates to TP, the point at which the option in (37) becomes available and is chosen. This +human theta-role percolates beyond TP. At TP, *B* detaches from *A* (a circumstance permitted by Elsewhere – see chapter two) and is copied to its antecedent in the super-ordinate clause to which it is applied.

Application of the theta-role to the antecedent secures their referential link, where as the +human specification it bears corresponds to the extra information it carries, namely that of unspecified extra individual(s). In this way, we account for its obligatory dependence on the matrix controller and the obligatory control properties

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the construction exhibits, but do not restrict ourselves to identity between these two elements. This is because the +human specification the theta-role bears represents the extra information encoded, namely that of additional individuals. And the two non-obligatory control properties that characterise these constructions, namely the semantic up-stepping of the understood subject relative to its controller and its requirement to refer to a human, fall out from this +human specification on the theta-role. Copying of a theta-role with a +human specification will be limited to partial control constructions since the option (37) is only available at tensed TPs, which as we have seen in (26) and (27) characterises partial but not non-partial obligatory control constructions.

The application of two operations, namely that of copying and that of specifying a theta-role, is less economical than application of one alone, suggesting that this possibility is limited. Recall that we began this chapter by noting a variation between speakers: the speakers of standard English in the pilot survey carried out here did not on the whole (see Table 1), accept partial control. Yet the American speakers of English from whom Landau collected his data did, which gives us two grammars: one that tolerates[9] partial control and one that does not. In German, the judgements of the speakers tended to group more reliably together, where a construction was accepted/reject by all (see Table 2). So in this case, we also have two grammars, namely one with and one without partial control. Taking on board the fact that application of both operations (copy and interpret) is a more expensive option than application of one these operations, together with the marginal nature of much of the data, I would propose the following: the partial control phenomenon is as restricted as it is because the operations needed for this construction are expensive and so economy renders non-partial control the preferred option. This leaves us with two possible grammars; the first conforms to economy and is operative in those speakers who reject partial control, and the second violates economy and is operative in those speakers who reject partial control:

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[9] I use this word since even those speakers that accept partial control indicate that the construction is often quite marked.

(43)   Grammar A: Copy only

Grammar B: Copy + Interpret

The interpretative option and the copying operation will now cover the distribution of all control constructions:

(44)   (1)   Specify *B* as human   = Non-Obligatory Control

(2)   Copy *B* to antecedent   = Obligatory Control

(3)   Do both of the above   = Partial Control

Chapter 6

Summary

This study has sought a representation of both obligatory- and non-obligatory control without recourse to a null-subject in the infinitival clause. In chapter one I set out the properties of both of these relations, beginning with obligatory control, which exhibited four syntactic properties consistently. In sum, these amounted to the need for the understood subject of a controlled infinitival clause to be c-commanded by a unique and local antecedent obligatorily. In contrast, non-obligatory control did not conform consistently to these syntactic restrictions, but it did exhibit a semantic requirement, namely that its understood subject be interpreted as human. On the basis of these properties, I offered a syntactic analysis of obligatory control, whereas non-obligatory control was place into the extra-syntactic realm. The properties of obligatory control could not argue for a particular direction within the syntax, since the very same properties had in the past provided impetus for reductions of control to Move, to Agree and to Binding. It was the last of the aforementioned relations, in particular the implementation provided in Borer (1989), that the present study took as its precedent. A reduction of control to Move, as in Hornstein (2000), introduced a raising operation that differed from raising as commonly conceived, relying on an NP-trace with ad hoc properties. A reduction of control to Agree, as in Landau (2001), obscured the anaphoric relation between 'PRO' in the infinitival and the matrix antecedent, by securing the control relation indirectly, through an Agree relation mediated by a functional head in the super-ordinate clause. Binding-based analyses, such as in Manzini (1983) and Borer (1989) avoided such complications, but retained PRO/pro as well as having their feet firmly in the government and binding tradition, notions which a contemporary proposal needed to

leave behind. A newly conceived binding theory, which did without a null subject altogether, was adopted. PRO-less analyses existed already, as in Bresnan (1978, 1980), but in such a theory, the controlled infinitival was analysed as a bare VP, as opposed to a CP, a conclusion which the present account wished to avoid. A CP-based and PRO-less syntactic theory of obligatory control, which might complement the PRO-free semantic account of control in Chierchia (1986), was determined as the way forward. Looking at previous reductions of control enabled me to form a list of desiderata for the present enterprise:

(1) I   Our theory of control should not rely on an ad hoc category such as
          PRO

     II   Our theory should account for the subject properties of the infinitival.

     III Our theory should provide an account for why obligatory control is
          subject to four conditions, which non-obligatory control is not: its
          antecedent is obligatory, must be unique, local and must c-command
          its understood subject.

     IV   Our theory should account for why the understood subject in non-
          obligatory control must be human.

     V   Our theory should explain why anaphoric binding shares a substantial
          number of properties with obligatory control.

     VI   Our theory should rule out controlled objects

     VII Our theory should explain why controlled clauses are CPs and not VPs
          or TPs.

In chapter two, I turned to a PRO-free syntactic representation of obligatory control. The system proposed would rest on a notion of theta-theory in which theta-roles existed as complex syntactic objects. Syntactic dependencies, such as that between a verb and a subject, for example, was represented by a mechanism of percolation, such that the verb's theta-role percolated to a node on which it immediately dominated and from here was applied to, its subject. This mechanism of percolation was based upon Neeleman and van de Koot (2002), who adopt insights from the framework of GPSG, as in Gazdar et al

(1985) and also the HPSG model of Pollard and Sag (1994). With the notion of theta-roles as syntactic objects established, I looked at the composition of a theta-role more closely and argued that a theta-role is a complex comprising two key components. The contribution of these components to argument-hood was clearly dissociated, namely the component that formally licensed an argument and the component concerned with the argument's interpretation. I labelled these theta-role components as A and B respectively. Independent motivation for this hypothesis came from Samek-Lodovici (2002), which, in its examination of Italian light-verb constructions, illustrated that the formal and the semantic properties of a verb could originate from different heads. Obligatory control was then explained using this pre-existing demarcation between theta-role components. Given that it is the interpretation of the infinitival's subject that is relevant to the control relation, as opposed to its case, the current proposal used the interpretative component, (B), to regulate this relation. B was copied in isolation to the antecedent in the matrix clause, thereby securing the referential dependency between the infinitival's understood subject and matrix argument. The path of the external theta-role complex in the infinitival ensured that subject properties of the infinitival were not lost and derived the control relation without PRO (Desideratum I & II). As Obligatory Control was analysed as a syntactic relation, the properties it shared with movement, predication and binding followed, since all grammatical dependencies exhibit these same properties (Desideratum III). The fact that the same component which regulated binding also regulated obligatory control, namely (B), accounted for the stark similarities that these two relations shared (Desideratum V). The absence of controlled objects received a case-related explanation and problems with such an explanation were shown to pertain to the difference between PRO and lexical anaphors, rather than the relation between these elements.(Desideratum VI). That controlled clauses were CPs, as opposed to VPs, also fell out from the system developed, since CPs blocked complete theta-role percolation and it was only then that obligatory control (i.e. theta-role separation) was licensed (Desideratum VII). Its advantages were that it avoided the need to depend on an empty category with dubious properties, whilst at the same time largely making the same predictions as those theories which rely on PRO. In addition, the mechanism could be set to work on Icelandic, the task of the following chapter.

Chapter three turned to the case-agreement properties of predicates in Icelandic, which bore directly on the question of whether or not we could do without PRO in a post GB era, given the frequent citing in the literature of Icelandic data that presupposes a case-marked PRO (see Sigurðsson 2002, Landau 2003). If this data could be explained without leaning on PRO, then a rather large obstacle to its being dispensed with is removed, lending credence to the PRO-less mechanism set out in chapter two. The main problem to be solved was to account for the case-agreement found on quirky predicates in infinitival clauses, without relying on PRO as this source. The reason for assuming PRO as the source for this agreement was that the case on the subjects of these same predicates in finite clauses *did* seem to be determined by the quirky predicate, thereby inviting a generalisation from finite to non-finite clauses, where PRO would be bear this case, despite its lack of a phonetic matrix.

After setting out the basis of the case system of Icelandic, I made a distinction between non-syntactic and syntactic agreement. The former referred to phi-feature agreement, the latter to case-agreement on adjectives and subject-verb agreement. A mechanism that linked quirky case to theta-role assignment (along the lines of Chomsky 1981) could account for the case on the subjects of quirky predicates and the lack of agreement characteristic of the quirky predicate itself. An idea introduced in this section was the assumption that nominative case represented the absence of case. I looked at cross-linguistic evidence for a bifurcation between languages in the way in which they licensed their arguments. On this basis of this evidence, it was suggested, following an idea dating back to Jacobsen (1935/66), that argument licensing was achieved either through subject-verb agreement or case on the subject, but not both. With the agreement data in place, I implemented the copying mechanism set out in chapter two on to Icelandic infinitival constructions. The PRO-free mechanism was applied successfully to the Icelandic data, allowing the possible agreements, whilst precluding the ungrammatical variations, illustrating that PRO was not necessary to accommodate the data. Long-distance case-agreement proved problematic for PRO-based and PRO-free analyses alike. The chapter concluded by taking the Icelandic question a step further, namely asking whether

Icelandic actually provided evidence *against* PRO. A comparison with the PRO-based approach adopted in Sigurðsson (2002) suggested that it did.

Chapter four, with its focus on non-obligatory control, shifted away from the syntactic realm, seeking to regulate this heterogeneous relation semantically. I set out a basis for predicting the distributional differences between obligatory and non-obligatory control; obligatory control involved syntactic selection by the controlling head. The following section looked at genericity, identifying those control structures that carried a generic reading. I ended by introducing an LF-interpretative rule that operated on all non-obligatory control structures; specifically this ensured that these clauses' understood subjects were interpreted as +human (Desideratum IV). Non-obligatory control structures whose understood subjects could be interpreted specifically, required something more to supplement the minimal specification provided by +human. A discourse rule, as guided by Accessibility (Ariel 1990) achieved this end. I demonstrated that such a rule was necessary independently of the constructions to hand and gave evidence for its extra-syntactic status. Finally, I showed how these two rules, LF- and discourse-governed respectively, could work in unison to account for other phenomena, namely the so-called linked reading effect introduced in Lebeaux (1984), the problem of which was in fact independent of control, and also the null generic objects of Rizzi (1986). The properties of these null-objects were also reinterpreted in terms of the internal theta-role, as opposed to a structurally represented null-argument.

In chapter five, I turned to partial control, a phenomenon first discussed in detail in Landau (2000). The core characteristic of this control construction was that the reference of the understood subject in the infinitival clause could exceed that of its matrix antecedent. Having looked first at verbs that made partial control manifest, I tested some partial control sentences of Landau (2000) on a small sample of standard English and German speakers. The results of this pilot study suggested that partial control was quite a marked phenomenon. These results gave an indication of the productivity of these constructions and an attempt was made to incorporate their restricted nature into the account to be developed. The properties of partial control were ambiguous, in that it

shared both obligatory- and non-obligatory control properties. On the basis of these ambiguous properties, I sketched out an analysis of partial control, within the system of theta-role percolation developed here, which essentially viewed partial control as obligatory control + non-obligatory control. Specifically, partial control materialised when the infinitival's external theta-role was subject to the LF-interpretative rule that attributed it with a human specification in addition to its interpretative component being copied to the super-ordinate clause. The violation of economy that resulted from simultaneous adoption of two operations was reflected in the restricted nature of the partial control construction: speakers who do not like partial control constructions are reluctant to violate economy, whereas those that can accommodate partial control are not. Throughout this study, PRO was shown to be unnecessary, unhelpful, or both.

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