THE UNIVERSITY OF CHICAGO

CONTROL AND RESTRUCTURING AT THE SYNTAX-SEMANTICS INTERFACE

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ABSTRACT

Landau (2000) distinguishes between P(artial) C(ontrol) and E(xhaustive) C(ontrol): PC predicates like hope admit a subset relation between controller and controllee (e.g., Kim hoped to gather at noon. [controllee = Kim and contextually salient others]); EC predicates like try do not (*Kim tried to gather at noon). This dissertation explores Cinque’s (2006) suggestion that whereas PC instantiates ‘true’ (biclausal) control, EC predicates realize inflectional-layer functional heads that instantiate (monoclausal) raising structures. Chapter 1 shows that this view accurately predicts several correlates of the EC/PC split, including the distribution of finite complements (in English) and the crosslinguistic distribution of restructuring (monoclausal effects) and overt embedded subjects. Chapter 2 shows how a raising analysis of EC predicates like ‘try’ can be reconciled with their apparent ‘control’ properties by proposing that such predicates are semantically keyed to an individual that must be syntactically represented; this proposal furthermore sheds light on an old question in the restructuring literature: why a predicate’s (in)ability to restructure is largely predictable from its semantics. The conclusion is that the restructuring status of EC predicates follows from an interaction between their lexical semantics and general constraints on clausal architecture. Chapter 3 shows that ‘want’ counterexemplifies the core generalizations and explains its exceptionality by appealing to independently motivated null structure that ‘want’ embeds under certain conditions. Finally, the core proposals also provide a suitable framework for understanding the relationship between control, restructuring, and tense (Chapter 4), and for understanding control in Mandarin Chinese (Chapter 5) and modern Greek (Chapter 6).
0.1 An empirical split and an analytical choice point

The motivation for this dissertation can be encapsulated in an analytical choice point brought about by the set of data in (1)–(4).

(1) | a. John was shocked [to get an A].  | (2) | a. John wanted [to get an A].  
|    | b. John claimed [to have gotten an A]. |    | b. John had [to get an A].  
|    | c. John wondered [how to get an A]. |    | c. John tried [to get an A].  
|    | d. John wished [to get an A]. |    | d. John managed [to get an A].  
|    | e. John planned [to get an A]. |    | e. John started [to get an A].  

(3) | a. John was shocked [that he got an A]. | (4) | a. *John wanted [that he would get an A].  
|    | b. John claimed [that he got an A]. |    | b. *John had [that he would get an A].  
|    | c. John wondered [how he would get an A]. |    | c. *John tried [that he would get an A].  
|    | d. John wished [that he would get an A]. |    | d. *John managed [that he got an A].  
|    | e. John planned [that he would get an A]. |    | e. *John started [that he got an A].  

Standard theories of control often take it for granted that the bracketed infinitives in (1)–(2) are uniformly CPs. This is true in frameworks that tie control in some way or another to the distribution of PRO (see, among many others, Chomsky 1981; Chomsky & Lasnik 1993; Bošković 1997; Martin 2001; Landau 2000, 2004, 2006); it is also true in the so-called Movement Theory of Control which does away with PRO in favor of A-movement of the controller (see especially Hornstein 1999, 2003; Boeckx & Hornstein 2004, 2006a,b, 2008; Bowers 2008; Boeckx et al. 2010a; Hornstein & Polinsky 2010).1 The data in (3)–(4), however, reveal a split in the syntactic behavior of these
embedding predicates: as we see in (3), the predicates in (1) can participate in a syntactic frame in which the infinitive is replaced by a finite clause, but as we see in (4), this is not true for the predicates in (2). This split in behavior creates a familiar kind of analytical tension whereby one must complicate one component of the grammar for the sake of simplifying another component. On the one hand, we can have a simple theory of infinitives, maintaining that they are always CPs, and take the split in (3)–(4) as indicating that control predicates differ in their ability to embed finite complements. Call this the ‘uniformity of infinitives’ view. This is what standard theories of control often take for granted. On the other hand, we can complicate our theory of infinitives, hypothesizing that they are sometimes CPs and sometimes something smaller than that (what I will ultimately argue are vPs, i.e., a verb in combination with all of its arguments). This view affords a simple interpretation of the split in (3)–(4): the predicates in (1) uniformly embed CPs (finite or not), whereas the predicates in (2) uniformly embed vPs, as the data in (4) crucially betray. Call this the ‘uniformity of selection’ view. The goal of this dissertation is to make the case for this latter view.

In claiming that standard theories of control often take for granted the ‘uniformity of infinitives’ view, an important qualification is in order. At least one current theory of control — namely Landau’s (2000; 2004) — does acknowledge the existence of restructuring effects in some languages whereby sentences similar to those in (2) involve complementation with something less than a CP. However, Landau — and, for that matter, Wurmbrand (1998, 2001), whose work Landau draws on in reaching his conclusions about restructuring — both view restructuring as an optional and constituting VPs that get interpreted as properties of individuals. (See, however, Chierchia 1990; Hornstein & Pietroski 2010; Stephenson 2010 for attempts to capture the de se nature of the embedded infinitives — among the key motivations for the property-based approach to controlled infinitives — without giving up their syntactic clausality.) It is also not true in syntactic frameworks like HPSG (Pollard & Sag, 1994), LFG (Bresnan, 2001), or Autolexical or Automodular Syntax (Kathman, 1996; Sadock, 2005, 2008, 2012a) where the relevant infinitives also uniformly constitute VPs. The important point is that in all of these approaches, the infinitives in (1) and the infinitives in (2) are treated in basically the same way.
The central hypothesis of this dissertation, in contrast, is that the vP status of the infinitives in sentences like (2) is crosslinguistically universal and follows inevitably from an interaction between the semantics of the embedding predicates and general constraints on clausal architecture. The current theory of restructuring that most closely resembles this position is that articulated by Cinque (2006), and therefore this dissertation can be viewed as an exercise in clarifying, refining and providing further evidence for some of the claims found in Cinque 2006.\(^3\)

### 0.2 Some telling correlates of the split

Aside from the finite complementation data discussed above (and closely related though not exactly the same, the distribution of overt embedded subjects), I will be drawing primarily on three kinds of evidence to make my case. The first kind of evidence is, unsurprisingly, from restructuring: effects such as clitic climbing in Italian and Spanish or long passivization in German, whereby two verbs in a tight embedding relationship behave as though they constitute just a single clause with respect to particular syntactic phenomena. Italian, Spanish and German are among the best studied languages with respect to restructuring properties (beginning with Rizzi 1978; Aissen & Perlmutter 1976; Bech 1955, respectively), but the important point will be that, as argued by Wurmbrand (2001), the availability of restructuring effects in languages that have them is largely predictable from the semantics of the embedding predicate. This allows us to look for related phenomena in other languages like English — and also Mandarin Chinese and modern Greek, to which I will

\(^2\) More precisely, Wurmbrand (2001) distinguishes between ‘functional restructuring’, which is obligatory for the verbs that trigger it, and ‘lexical restructuring’, which is optional for the verbs that trigger it. See also Wurmbrand 2004.

\(^3\) It should also be acknowledged that although standard theories of control often treat the infinitives in both (1) and (2) as CPs, it is an old idea in the literature that complement control comes in two basic varieties, keyed to some factor or set of factors that differ from one approach to the next. (See Landau 2011 for discussion.) One of the more recent and prominent manifestations of this idea is in Landau’s (2000; 2004; 2006; 2008b) distinction between Exhaustive Control and Partial Control, which also plays an important role in my own proposal and will therefore be reviewed in detail below.
extend my analysis in the latter two chapters of the dissertation — where restructuring effects are less apparent: as it happens, the predicates in (2) but not those in (1) have a strong crosslinguistic tendency to restructure, which, I believe, is deeply connected with the split in (3)–(4) and which points to a crosslinguistically universal and in part semantically based theory of restructuring.

The second kind of evidence I will draw on is the distinction, popularized in Landau’s (2000; 2004; 2006; 2008b) work, between Exhaustive Control and Partial Control (henceforth ‘EC’ and ‘PC’ respectively). The basic observation is that, contrary to what most standard theories of control would lead us to expect, there is a class of control constructions in which the relationship between the controller and the controllee can be one other than absolute identity; in particular, a proper superset relation is admitted. In (5), for example, the (non-)acceptability of the embedded collective adverbial together indicates that (5a) but not (5b) supports PC. (The prepended parenthetical material is not obligatory but helps make contextually salient a plurality — in this case, Mary and John — which is required for PC to be felicitous.)

(5) a. (Mary said that) John wished to have lunch (together). PARTIAL CONTROL

b. (Mary said that) John tried to have lunch (*together). EXHAUSTIVE CONTROL

An important conclusion Landau draws is that the availability of PC turns on the semantic class of the embedding predicate. Crucial to my enterprise is that there is a striking connection between the split in (3)–(4) and the EC/PC split. With one important exception, those predicates in (1)/(3) support PC whereas those predicates in (2)/(4) do not. This, I believe, points to a deep connection between restructuring, the EC/PC split, the ungrammaticality of the sentences in (4), and the lexical semantics of the embedding predicates. A central goal of this work is to explicate the nature of this connection. (The one exception to the generalization is want: it supports PC, and yet crosslinguistically is among the most reliably restructuring verbs. I believe that there is a principled explanation for this exception and devote Chapter 3 of the dissertation to this matter.) The connection between EC/PC and restructuring has been addressed before: building on earlier work

Finally, a third kind of evidence I will use is the temporal interpretation of infinitives like those in (1)–(2). This is important for at least two reasons. First, Landau’s account of the EC/PC split is crucially tied to tense and in particular to the availability of matrix/embedded tense mismatches which Landau generalizes are available for PC predicates but not for EC predicates. Hence one measure of the success of my alternative approach to the data will be its ability to account for the temporal interpretation facts. Second, abstracting away from the EC/PC split, infinitival tense has played a key role in some theories of control, beginning with Stowell 1982 and found more recently in Martin’s (2001) ‘null Case’ approach to the distribution of PRO. Fortunately, Wurmbrand (2006, 2007, 2011) has made great headway in elucidating our understanding of infinitival tense, and I believe that her overall conclusions in fact support my central claim that sentences like (1) are biclausal (therefore projecting two instances of Tense) whereas sentences like (2) are monoclausal (therefore projecting just one instance of Tense).

These three sources of evidence form the backbone of my argument; however, in extending the analysis to Mandarin Chinese and Greek, I appeal to other sources of evidence as well. For Mandarin Chinese, I argue that asymmetries in the availability of overt embedded subjects and in the distribution and interpretation of embedded modal and aspectual markers, as well as other phenomena that have traditionally figured in the as-yet unresolved debate over whether Mandarin has a finite/nonfinite distinction (see especially Huang 1982, 1984, 1987, 1989; Li 1985, 1990; C.C. Tang 1990; Ernst 1994b; T.C. Tang 2000; T-.H. J. Lin 2011, 2012 for the affirmative view and Xu 1985–1986, 1994, 2003; Y. Huang 1994, 1995, Hu et al. 2001; J. Lin 2010 for the negative view) are in fact best explained by appealing to a split between monoclausal and biclausal structures. If this view is correct, then it provides important crosslinguistic support for my core proposal, as well
as having the interesting implication that we can explain all of the relevant Mandarin data without
appealing to a finite/nonfinite split.

In Greek, complement clauses are uniformly finite in the sense that the verb always inflects
for subject agreement and (seemingly) for tense and aspect; Greek therefore poses an important
challenge to my view that the restructuring/monoclausal status of certain embedding predicates is
universal. However, most accounts of Greek control since Iatridou 1993 recognize a connection
between the availability of control and the temporal and/or aspectual properties of the embedded
predicate (see especially Terzi 1992; Iatridou 1993; Varlokosta & Hornstein 1993; Landau 2004;
Spyropoulos 2008; Roussou 2009), and what I argue is that this connection is elegantly captured by
again appealing to the monoclausal/biclausal split. Rather than precluding a restructuring analysis,
the uniformly finite nature of the Greek embedded verb is, I argue, decomposable into two points
of crosslinguistic variation: Greek differs from e.g. English in that tensed nonpast forms of the
verb are syncretic with tenseless forms, and Greek differs from e.g. English in how agreement gets
distributed throughout the clause (in Greek, agreement is found on every verb, whereas in English,
agreement is found only once per finite clause). I furthermore point to (apparent exceptions to) the
clause-boundedness of emphatic polarity item licensing (Giannakidou & Quer, 1997) and inverse
scope (Farkas & Giannakidou, 1996) as potential sources of independent evidence for the proposed
monoclausal/biclausal split in Greek.

0.3 Main theoretical proposals and their implications

The main theoretical goal of this dissertation is to elucidate the relationship between control, re-
structuring, and the meanings of the predicates that participate in these constructions. Here I briefly
summarize the main proposals that I believe capture this relationship in the most straightforward
way, as well as touching on their implications for syntax, semantics, their interface, and matters of
crosslinguistic (non-)variation.

Adopting the terms PARTIAL CONTROL and EXHAUSTIVE CONTROL as convenient labels for the class
of predicates exemplified in (1) and (2) respectively, I argue that all of the available evidence converges on the syntactic split in (6)–(7), whereby partial control predicates instantiate biclausal structures with an embedded PRO subject, as on many standard approaches to control, but exhaustive control predicates (as on Cinque’s 2006 approach to restructuring verbs) realize functional heads in the inflectional layer of the clause that combine with a vP whose highest argument raises into matrix subject position.

(6) PARTIAL CONTROL predicates
= CP-complement w/ PRO subject

John₁ VP
   | V
   | hope
   CP
   PRO₁(+) to be happy

(7) EXHAUSTIVE CONTROL predicates
= vP-complement w/ subject raising

John₁ FP
   | F
   | try
   vP
   John₂ to be happy

A desirable consequence of this analysis is that the so-called ‘exhaustive control’ phenomenon becomes a property of raising structures generally, and by the same token, ‘partial control’ becomes a fully general property of PRO (and I will suggest below, based on Rullmann’s 2004 ‘partial binding’ facts which obtain with overt bound pronouns, that this property is not unique to PRO but extends to some other kinds of bound pronouns as well).

If this view is correct, then it has the interesting implication that both the PRO approach and the movement approach to control are correct when restricted to their appropriate domains of applicability: PRO obtains in biclausal structures and movement obtains in monoclausal structures. (In this connection, see van Urk 2010, who similarly argues for a hybrid PRO/movement [though uniformly biclausal] approach to control for reasons that partially overlap with mine but that are not concerned with the restructuring facts.) A number of phenomena have figured in the debate between the two currently dominant approaches to control, including not only ‘partial control’ (Landau 2000, 2004, 2006, 2008a,b, 2010; cf. Hornstein 2003; Boeckx & Hornstein 2004; Bowers 2008; Rodrigues 2008; Boeckx et al. 2010a) but also case assignment (Landau, 2003, 2006;
Boeckx & Hornstein, 2006a; Sigurdsson, 2008; Landau, 2008b; Bobaljik & Landau, 2009; Boeckx et al., 2010b) and backward control (Polinsky & Potsdam, 2002, 2006; Potsdam, 2009; Alexiadou et al., 2010). One of the goals of the dissertation is to show that the crosslinguistic distribution of restructuring deserves a role in the debate as well.

The proposal instantiated by (6)–(7) raises two obvious questions whose answers constitute the two other main proposals of this dissertation. First, if EC predicates like *try* have a raising syntax, then why do they pass all the standard tests for control? One possible solution that I entertain but reject is to follow proponents of the movement theory of control in abandoning the \( \theta \)-criterion and instead taking \( \theta \)-roles to be features so that a single argument can bear more than one \( \theta \)-role (see e.g. Hornstein 1999). What I show is that, when implemented in a type-driven compositional semantics like that in Heim & Kratzer 1998, such a view forces us to complicate the semantics of movement so that movement sometimes results in predicate abstraction (for wh-movement, raising, passivization, and most other kinds of movement) and sometimes does not (for the control cases). As an alternative, drawing on work by Hacquard (2006; 2010) who argues that modal height correlates with certain aspects of modal meaning, modeled as binding relations that obtain in different parts of the clause, as well as work by Giannakidou (1998) who argues that some variables in natural language (dependent variables) cannot receive their value from the context, I propose that EC predicates like *try* contain as part of their meaning a dependent individual variable: when the subject raises in a structure like (7), it obligatorily binds this variable, thereby simulating a control relation with a raising syntax. This allows us to maintain simplicity in the semantics of movement: movement always results in predicate abstraction.

The second question has to do with what determines whether a given control predicate participates in the structure in (6) or participates in the structure in (7), and this question in fact has a theoretical significance that extends beyond its role in the argumentation here; it is an old question in the restructuring literature: why does restructuring happen, and what determines whether a given predicate restructures? I argue for a version of Cinque’s (2006) answer to this question: pred-
icates restructure just in case they correspond semantically to a functional head in the inflectional-layer of the clause, in which case they realize that position. I furthermore show that this proposal at first glance seems to get the wrong results for predicates like ‘claim’, ‘regret’, ‘conclude’ and ‘believe’, which systematically and crosslinguistically fail to evidence restructuring effects even though semantically they seem to correspond to subtypes of Mood$^{speech\text{ act}}$, Mood$^{evaluative}$, Mood$^{evidential}$, and Mod$^{epistemic}$, respectively. But further investigation reveals that these exceptions support the analysis: the crucial feature of these predicates is that the inflectional heads they correspond to are above Tense in Cinque’s (1999; 2006) IP hierarchy. Adopting the plausible assumption that the subject can be interpreted no higher than [Spec,TP], this means that an attempt to restructure a predicate like ‘claim’ would result in a dependent variable too high to be bound, crashing the derivation. Consequently, predicates like these have to be realized as lexical verbs in biclausal structures, as in (6). If this proposal is correct, then it has important implications for the syntax-semantics interface: if a predicate has a meaning that corresponds to an inflectional-layer functional head, then it must realize that head, unless doing so would lead to ungrammaticality.

A comment is also in order on crosslinguistic (non-)variation. As a working hypothesis, although the languages I investigate are primarily confined to English, Mandarin Chinese, and Greek, I intend my core proposals to be crosslinguistically universal. Take Mandarin, for example: despite having no (overt) morphology to signal features like tense or agreement, Mandarin patterns like English to a high degree in the (non-)availability of overt embedded subjects as a function of the choice of embedding predicate, as we see in (8)-(9). Crosslinguistic facts like these reinforce the view that there is a deep connection between the semantics of an embedding predicate and the syntactic frames it participates in — a connection that is not affected by superficial crosslinguistic differences in inflectional morphology. (See also Stiebels’ 2007 distinction between ‘inherent control’ and ‘structural control’.)

(8) a. zhangsan shefa (*lisi) kai men.
    Zhangsan try Lisi open door
    ‘Zhangsan tried (*for Lisi) to open the door.’
b. zhangsan gan (*lisi) kai men.
   Zhangsan dare Lisi open door
   ‘Zhangsan dared (*for Lisi) to open the door.’

c. zhangsan kaishi (*lisi) kai men.
   Zhangsan start Lisi open door
   ‘Zhangsan started (*for Lisi) to open the door.’

d. zhangsan neng (*lisi) kai men.
   Zhangsan can Lisi open door
   ‘Zhangsan is able (*for Lisi) to open the door.’

(9) a. zhangsan xiangyao lisi kai men.
   Zhangsan want Lisi open door
   ‘Zhangsan wants Lisi to open the door.’

b. zhangsan renwei lisi kai le men.
   Zhangsan believe Lisi open prf door
   ‘Zhangsan believes Lisi opened the door.’

However, even working with this limited data set, English and Greek exhibit points of variation that force a weakening of this hypothesis and help shed light on what aspects of the behavior of the relevant predicates are universal and predictable from lexical semantics, what aspects are subject to variation, and why. In particular, English and Greek differ in the availability of overt embedded subjects with *try* (see Joseph 1992; Terzi 1992; Spyropoulos 2008; Roussou 2009), as seen in (10)–(11). This difference cannot be entirely attributable to the uniformly finite nature of Greek embedded clauses: some dialects of English accept the parenthetical in (10) (Henry, 1995), and other Greek control verbs like *tolmo* ‘dare’ are unlike ‘try’ in this respect.

(10) The teacher tried (%for the student) to solve the problem.

(11) O daskalos prospathise na lisi (ο fititis) to provlima.
   the teacher tried prf solve the student the problem
   ‘The teacher tried (for the student) to solve the problem.’

A full understanding of the crosslinguistic split in (10)–(11), I will argue, entails an excursion into the formal semantic properties of ‘try’ (Sharvit, 2003; Grano, 2011), as well as into a comparison
with the (crosslinguistically more stable) syntax-semantics of ‘want’ and how ‘want’ interacts with argument structure and argument-introducing morphology. The upshot of the proposal, however, will be that Greek allows structures like (11) via the introduction of a silent causative predicate as a ‘last resort’ coercion strategy for accommodating the ‘extra’ argument. If this conclusion is on the right track, it implies that crosslinguistic variation in the availability of certain kinds of coercion mechanisms (on which see also Lin & Liu 2005; Sawada & Grano 2011 for the application of this idea to unrelated empirical domains) may be responsible for at least some of the observed points of variation in how control predicate lexical semantics interacts with otherwise universal properties of syntax and the syntax-semantics interface. The case study embodied in (10)–(11) only scratches the surface, of course, and I hope that it will inspire more investigation of these questions in the future.

0.4 Plan of the dissertation

The remainder of this dissertation is divided into six chapters, organized as follows. Chapter 1 reviews the relevant facts and theoretical approaches to Exhaustive and Partial Control, and then lays out a number of properties that correlate with the EC/PC split. I argue that the theory that best captures the relationship among the correlated properties is that suggested by Cinque (2006), whereby PC instantiates ‘true’ control in the standard sense (i.e., a lexical verb embedding a CP complement with a PRO subject) but EC instantiates a monoclausal raising structure whereby the ‘control predicate’ actually realizes a functional head in the inflectional layer of the clause, its complement constituting the main vP.

Chapter 2 considers together two important questions raised by the approach advocated in the previous chapter. First, how is it possible to maintain a raising analysis for EC predicates like try which pass all the standard tests for control (i.e., entail something about their surface subject)? Second, why is it that only certain predicates restructure (i.e., on the view advocated here, realize inflectional heads)? In a nutshell, I argue that the answer to the first question sheds important new
light on the second question. As for the first question, I argue that a uniform raising analysis of EC restructuring predicates like try is possible through the proposal that such predicates contain an individual variable as part of their meaning. This variable is special in that it must be bound in the structure (like a reflexive pronoun and like a DEPENDENT variable in Giannakidou’s 1998 sense: it cannot receive its value from the context). Consequently, when the subject raises to [Spec,TP], it obligatorily binds the variable, thus simulating a control relation in a raising structure. As for the latter question, I make a novel empirical generalization relating the availability of restructuring to Cinque’s (1999; 2006) cartographic approach to IP structure. Namely, restructuring predicates all have meanings that correspond to heads below Tense in Cinque’s IP whereas non-restructuring predicates all have meanings that correspond to heads above Tense in Cinque’s IP. The explanation for this generalization is that restructuring above Tense results in an obligatorily bound variable that is structurally too high to be bound, thus yielding ungrammaticality.

Chapter 3 considers the exceptional status of want: in contrast to virtually all of the other relevant predicates, want both supports PC and consistently has the ability to restructure in languages that have overt restructuring effects. I work out a principled explanation for this exceptionality by drawing on a suggestion made by Cinque (2006) that want is special among restructuring predicates in being able to embed a null verb $\emptyset_{have}$ with the meaning have/get. Such a proposal enjoys a long history of support in analyses of the syntax and semantics of transitive want (as in e.g. John wants an apple): see Karttunen 1976; Ross 1976; McCawley 1979; den Dikken et al. 1996; Fodor & Lepore 1998; Harley 2004; though cf. also Pustejovsky 1995; Merchant 1999; Wechsler 2008; Harves 2008; Harves & Kayne 2012. What I show is that as long as we grant some flexibility in the kinds of complements $\emptyset_{have}$ admits, the exceptionality of want automatically follows. I then further substantiate the $\emptyset_{have}$-approach by providing $\emptyset_{have}$ with a semantics based on Sæbø’s (2009) semantics for have and I show that the account predicts to a high degree of accuracy the syntactic range of complements that want admits.

Chapter 4 considers infinitival tense. It begins with the pretheoretical position that broadly
speaking, there are three logically possible temporal relations that may hold between an embedding predicate and its complement infinitive: simultaneity, posteriority and anteriority. I then proceed to investigate how the availability of these relations correlates with the choice of embedding predicate. On the theoretical side, I draw on evidence and analysis in Wurmbrand (2011): in order to investigate the distribution of syntactic Tense in infinitives, Wurmbrand uses data from ‘sequence of tense’ and other phenomena that have figured prominently in analyses of the semantics of embedded tense. I argue that her conclusions largely support my central claim that PC predicates instantiate biclausal structures (projecting two instances of Tense) whereas EC predicates instantiate monoclausal structures (projecting one instance of Tense). One important subsidiary claim made in this chapter is that Landau’s (2000) generalization that EC correlates perfectly with the unavailability of tense mismatches is too strong: some EC predicates admit future-oriented infinitives. This modification is conceptually required by my reclassification of want as underlyingly an EC predicate, but it is also empirically supported by an investigation of tense under modals that goes beyond the data Landau considers. This chapter also includes a discussion of tense in complements to factive predicates which, as far as I know, reveals previously unknown facts about the interaction between form and meaning in the temporal interpretation of complements to factive predicates.

Chapter 5 is concerned with Mandarin Chinese. I show that those phenomena that have traditionally figured in the debate over whether Mandarin has a finite/nonfinite distinction (including most importantly the distribution of overt embedded subjects and the distribution and interpretation of embedded modal and aspectual markers) can be fruitfully interpreted as reflecting a monoclausal/biclausal split rather than a finite/nonfinite split. This has two important implications. First, Mandarin provides crosslinguistic support for my core proposal that the restructuring status of certain predicates follows from an interaction between their lexical semantics and general constraints on clausal architecture. Second, taking a stance on the debate over whether Mandarin has a finite/nonfinite distinction, I argue that all the alleged phenomena evidencing a finite/nonfinite split
actually evidence a monoclausal/biclausal split, which (although this depends on what one thinks the ‘null hypothesis’ should be) suggests that Mandarin lacks a finite/nonfinite distinction.

Finally, chapter 6 is concerned with (modern) Greek. Greek is important to the overall project for two reasons already alluded to earlier in this introduction. First, Greek embedded clauses are uniformly finite, thus seemingly posing a change to my hypothesis that the restructuring status of certain predicates is universal. (In fact, the existence of languages like Greek plays a role for Landau in dissociating the link between restructuring and EC — see in particular Landau 2004, note 14.) In the sizeable literature on Greek control and related matters (see, among others, Philippaki-Warburton 1987; Iatridou 1993; Varlokosta 1993, 1994; Varlokosta & Hornstein 1993; Terzi 1992, 1997; Philippaki-Warburton & Catsimali 1999; Krapova 2001; Landau 2004; Kapetangianni & Seely 2008; Kotzoglou & Papangeli 2008; Sadock 2008; Roussou 2009; Alexiadou et al. 2010), two recent approaches (Kapetangianni & Seely, 2008; Alexiadou et al., 2010) anticipate half of my proposal by arguing for the raising character of Greek complement control, but the other half of my proposal (monoclausality) has not (yet) received widespread support, with the recent partial exception of Roussou 2009. Hence, a primary goal of this chapter is to show that Greek is not only amenable to but is in fact best explained by an analysis in which exhaustive control predicates instantiate monoclausal structures. Second, Greek considered together with English and many other languages constitutes a point of crosslinguistic variation in the availability of embedded subjects under ‘try’, and I take this split as a case study for investigating how the general principles I argue for may interact with language-specific factors to give rise to particular kinds of variation.
CHAPTER 1
MOTIVATING A FUNCTIONAL RESTRUCTURING APPROACH TO EXHAUSTIVE CONTROL

1.1 Introduction

In recent years, the distinction between E(xhaustive) C(ontrol) and P(artial) C(ontrol) has figured prominently in research on control theory, due largely to Landau’s influential work (see especially Landau 2000, 2004, 2008b), which is the first to systematically describe and analyze the phenomenon (though cf. also earlier observations by Wilkinson 1971; Lawler 1972; Williams 1980; Martin 1996; Petter 1998; Wurmbrand 1998). The core of Landau’s observation is that — contrary to the expectations of most standard theories of control — some control constructions admit a relation other than absolute identity between the controller and controllee, in particular, a proper subset relation. In (1a), for example, we see that *gather is incompatible with a semantically singular subject. When *gather is embedded under a control predicate, however, some control predicates like try preserve this incompatibility, as in (1b), whereas other control predicates like want do not, as in (1c). In a context in which we understand John to be part of a committee, for example, (1c) can be understood to mean that John wanted for himself and the rest of the committee to gather at noon. No amount of context, however, will allow for (1b) to be acceptable with such a reading. Those control predicates like want that admit this subset relation Landau terms PARTIAL CONTROL predicates, while those like try that require absolute identity Landau terms EXHAUSTIVE CONTROL predicates.

(1) a. *John gathered at noon.
    b. *John tried to gather at noon.
    c. John wanted to gather at noon. ← PARTIAL CONTROL

Taking as its starting point Landau’s observations, this chapter has three main goals. The first goal is to show that the full range of phenomena that correlate with the EC/PC split has never been
fully characterized and to provide such a characterization. As will be discussed below, Landau shows that the EC/PC split has two correlates. First, it correlates with semantically definable verb classes: implicative, aspectual and modal verbs constitute the EC class and factive, propositional, desiderative and interrogative verbs constitute the PC class. Second, the EC/PC split correlates with the (in)ability of a control predicate to support tense mismatches: EC predicates require that the tense of the matrix verb be identified with the tense of the embedded verb, whereas PC predicates do not. (I will, however, ultimately, argue for a modified version of this generalization. See Chapter 4.) But as I will show below, there are a few additional correlates of the split that need to be recognized as well. The first correlate has to do with the distribution of finite complements in English: EC predicates disallow finite complements whereas PC predicates allow them. The second correlate is closely related and has to do with the distribution of overt embedded subjects. I will show that EC predicates systematically disallow overt embedded subjects (whether via ECM or via finite complementation), whereas PC predicates systematically allow overt embedded subjects. The third correlate has to do with restructuring and has been observed and discussed before (Wurmbrand, 1998, 2001, 2002; Barrie, 2004; Cinque, 2006): there is a crosslinguistically robust tendency for EC verbs to be restructuring verbs and for PC verbs to be non-restructuring verbs. But whereas Landau (2000); Wurmbrand (2001, 2002) both argue for versions of the view that restructuring entails EC but not vice versa, I will entertain the stronger hypothesis (as do Barrie 2004; Cinque 2006) that this correlation holds in both directions. Finally, the fourth correlate has to do with the fact that some predicates standardly analyzed as control predicates also have uses as raising predicates (Perlmutter, 1970), or, according to some scholars, are in fact raising-only: see Bhatt 1998; Hackl 1998; Wurmbrand 1999 on modal verbs and Rochette 1999; Fukuda to appear on aspectual verbs. I show that this ‘control/raising-ambiguous’ or ‘raising-only’ status is found only among EC predicates and never among PC predicates.

After describing the aforementioned correlates of the EC/PC split, the second goal of this chapter is to argue that once all of these correlates are brought to bear, the theory that best captures
all of the data is that suggested by Cinque (2006), whereby PC verbs are lexical verbs that take CP complements (hence instantiating biclausal structures) but EC verbs are functional heads in the inflectional layer of the clause (hence instantiating monoclausal structures). Cinque, in making his proposal, intends to capture the correlation between a predicate’s inability to support partial control and its restructuring status. As Cinque points out, if EC predicates are simply inflectional heads, and inflectional heads do not introduce arguments, then the ‘controller’ and ‘controllee’ in an EC construction constitute an A-chain, and so the exhaustive control effect follows. I will show that this proposal also goes a long way toward making sense of the rest of the phenomena that correlate with the EC/PC split.

Finally, the third goal of this chapter is to isolate a set of questions and challenges that persist under the functional restructuring approach to EC for use as starting points for the remaining chapters of the dissertation. Five questions are discussed. First, insofar as inflectional-layer functional heads are uniformly raising (i.e., passing up the highest argument of their complement), the approach advocated here demands that all EC verbs are actually raising verbs, even those like try and manage that always entail something about their surface subject. I discuss how a raising approach to such verbs can be implemented and what its implications are for the raising/control distinction. Second, I address the question of why (as Landau argued) a verb’s status as EC or PC is recoverable from its semantic class. Third, want and its crosslinguistic kin constitute an important challenge for the functional restructuring approach to exhaustive control since this verb tends to be a restructuring verb and yet with respect to some of the other phenomena behaves as a PC verb. Fourth, I return to Landau’s tense (mis)match data: why is it that EC verbs disallow tense mismatches whereas PC verbs allow them? The final question has to do with matters of crosslinguistic variation: to what extent do the core proposals entertained in this chapter for English find support across languages? In particular, what is the right way to understand variation in how languages classify verbs as EC or PC and as restructuring or non-restructuring? And how can a monoclausal functional restructuring approach to exhaustive control be maintained for languages like Greek in which controlled
complements bear their own tense and agreement morphology?

The rest of this chapter is organized as follows. Section 2 provides more detailed background on Landau’s empirical generalizations, reviews his theoretical account of the EC/PC split, and reviews alternative approaches to EC/PC found in other theories of control. Section 3 lays out the additional correlates of the EC/PC split. Section 4 introduces Cinque’s (2006) theory of functional restructuring and provides initial defense of the core proposal that exhaustive control is functional restructuring. Section 5 discusses a few refinements and elaborations to the core proposal, including but not limited to the implications of functional restructuring for English verbal morphosyntax and independent semantic support for the monoclauasality of EC structures. Section 6 compares the approach advocated here with the few other extant approaches to the relationship between EC/PC and restructuring. Finally, section 7 concludes and articulates some of the most pressing questions that persist under the present approach as a way of motivating and previewing the remaining chapters of the dissertation.

1.2 Background on Exhaustive and Partial Control

1.2.1 Landau’s empirical generalizations

In a series of works, Landau (1999; 2000; 2003; 2004; 2006; 2008a; 2008b; 2010) has defended a theory of control in which the distinction between E(xhaustive) C(ontrol) and P(artial) C(ontrol) is important. Although occasional observations relating to the EC/PC split are found in the literature as far back as the 1970s (see in particular Wilkinson 1971; Lawler 1972; Williams 1980; Martin 1996; Petter 1998; Wurmbrand 1998), Landau is the first to describe and analyze the phenomenon in a systematic way. My purpose here is to review the groundwork laid in Landau 2000 by summarizing Landau’s empirical generalizations in this subsection and Landau’s theoretical account of the generalizations in the next subsection.

As already described above, Landau’s basic observation is that — contrary to the expectations of most standard theories of control — some control constructions admit a relation other than absolute
identity between the controller and controllee, in particular, a proper subset relation. In (2a), for example, we see that *gather is incompatible with a semantically singular subject. When *gather is embedded under a control predicate, however, we see that some control predicates like try preserve this incompatibility (2b) whereas other control predicates like want do not (2c): in a context in which we understand John to be part of a committee, for example, (2c) can be understood to mean that John wanted for himself and the rest of the committee to gather at noon. No amount of context, however, will allow for (2b) to be acceptable with such a reading.

(2) 
   a. *John gathered at noon.
   b. *John tried to gather at noon.
   c. John wanted to gather at noon. ← PARTIAL CONTROL

Two auxiliary observations about the EC/PC split are crucial for the account that Landau develops. First, whether a control construction admits PC is recoverable from the semantic class of the control predicate, and the division of semantic classes of predicates into EC and PC is keyed to tense. The semantic classes of control predicates identified by Landau are exemplified in (3)–(4). According to Landau, IMPlicative, ASPECTual and MODAL control predicates disallow PC and are hence classified as EC, whereas FACTive, PROpositional, DESiderative and INTERROGATIVE control predicates all admit PC. Landau reinforces this generalization with crosslinguistic support from German, Italian, Spanish, and French.

(3) EC
   a. John managed to solve the problem. IMPlicative
   b. John began to solve the problem. ASPECTual
   c. John had to solve the problem. MODAL

(4) PC
   a. John hated to solve the problem. FACTive
b. John claimed to have solved the problem.  PROPOSITIONAL

c. John hoped to solve the problem.  DESIDERATIVE

d. John wondered how to solve the problem.  INTERROGATIVE

(Landau 2000:37)

The relationship between these verb classes and tense is exemplified in (5): Landau generalizes that EC complements are all ‘untensed’ in that they inherit the tense of the matrix verb, thus disallowing tense mismatches, as seen in (5a), whereas PC complements are all ‘tensed’ in that they admit a temporal interpretation that is not identical to the matrix tense, as seen in (5b).

(5)

a. *Yesterday, John began to solve the problem tomorrow.

b. Yesterday, John hoped to solve the problem tomorrow.  (Landau 2000:57)

Landau’s second crucial observation is that the ‘looser’ control relation involved in PC contexts has to do with semantic rather than syntactic plurality. Consider the contrast in acceptability between the pair of sentences in (6) and the pair of sentences in (7). (Following Landau’s convention, the prepended parenthetical material is designed to facilitate a PC reading by making a plurality salient.) (6) shows that PC may involve an inherently collective predicate like meet or a predicate made collective via together. (7), on the other hand, shows that PC may not involve a plural anaphor like each other or a plurally inflected predicate like become members. (In this respect, partial control differs from split control, which does involve syntactic plurality: see Koster & May 1982; Landau 2000; Madigan 2008; Fujii 2010. See, however, Modesto 2010 for the claim that partial control in Brazilian Portuguese inflected infinitives also involves syntactic plurality.)

(6)

a. (John told Mary that) he wanted to meet at 6.

b. (John told Mary that) he wanted to eat together at 6.

(7)

a. *(John told Mary that) he wanted to see each other other at 6.
b. *(John told Mary that) he wanted to become members of the new club.

Landau argues that this split tracks an independently motivated split between semantic and syntactic plurality. Syntactically singular subjects — as long as they are group-denoting like *committee — admit semantically plural predicates, as we see in (8), but (at least in American English) they do not admit syntactically plural predicates, as we see in (9).

(8) a. The committee met at 6.
    b. The committee ate together at 6.

(9) a. *The committee saw each other at 6.
    b. *The committee became members of the new club.

Landau further supports this generalization with crosslinguistic data, showing that PC predicates systematically pattern in acceptability with predicates of syntactically singular but group-denoting subjects.

Landau synthesizes these two observations — the first relating EC/PC to tensedness and the second establishing that PC has to do with semantic plurality — into the generalization in (10), which forms the starting point of his theoretical account.

(10) *The PC-Generalization

In tensed complements, PRO inherits all phi-features from the controller, including semantic plurality, but not necessarily semantic singularity.

Landau 2000:60

In addition to capturing the above observations, the generalization in (10) is worded in such a way as to capture the fact that PC allows for a semantically singular controller with a semantically plural controller but not vice versa. In other words, the admissible subset relation is one-way only:
(11b) is ungrammatical because the controller (*committee*) is semantically plural but the controlled predicate (*wear a tie*) requires a semantically singular subject.

(11)  
   a. The committee was glad that the chair had agreed to gather before the elections.  
   b. *The chair was glad that the committee had agreed to wear a tie.*

1.2.2 Landau’s theoretical account

Here I review Landau’s (2000) theoretical account of the generalizations reviewed in the previous subsection; for a somewhat updated account couched within a broader crosslinguistic theory of the distribution of control, see also Landau 2004, which I review in chapter 6 (section 6.6.3) below. Landau’s theoretical account relies on a particular view of the syntactic correlate of tensedness in embedded clauses and on a set of assumptions about how phi-feature agreement works.

Turning first to tensedness, recall Landau’s generalization that a control predicate admits PC just in case it is tensed, i.e., allows a tense mismatch:

(12)  
   a. *Yesterday, John began [\(\psi\) to solve the problem tomorrow]. \(\psi\) is UNTENSED  
   b. Yesterday, John hoped [\(\psi\) to solve the problem tomorrow]. \(\psi\) is TENSED

Building on earlier work by Pesetsky & Torrego (2001), Landau’s proposal is that just in case an embedded clause is tensed, T-to-C movement occurs. As illustrated in (13), for Landau, PC/tensed constructions and EC/untensed constructions are similar in both involving an embedded CP with a PRO subject that is generated VP-internally and raises to [Spec,TP] of the embedded CP. The difference between the two constructions, however, is that in PC, T-Agr raises to C whereas in EC it remains in situ.
This theoretical split interacts with Landau’s conception of (obligatory\(^1\)) control as an instance of Agree, where the probe is a matrix functional head (matrix T in the case of subject control and matrix \(v\) in the case of object control). Crucially, the goal depends on whether T-to-C movement has taken place. Landau proposes that in PC, T-to-C movement causes T-Agr to be high enough in the structure that it constitutes the goal, whereas in EC, because T-to-C movement has not taken place, the goal is PRO.

\[
\text{(14) a. PC} = \text{Agree (F}_{\text{matrix}}, \text{T-Agr}_{\text{embedded}}) \\
\text{b. EC} = \text{Agree (F}_{\text{matrix}}, \text{PRO}_{\text{embedded}})
\]

The final piece needed to get the account to work is a set of assumptions about how phi-feature agreement works. In particular, Landau assumes the following:

\[
\text{(15) a. DPs, including PRO, enter the derivation with valued phi-features.} \\
\text{b. Functional heads enter the derivation with unvalued phi-features.} \\
\text{c. Semantic Plurality (SP): +/- on DP, +/-/\emptyset on functional heads.}
\]

---

1. Beginning with Williams 1980, researchers have recognized a distinction between obliga-
tory and non-obligatory control: roughly speaking, the distinction is that in the former but not in
the latter variety, a controller is obligatory and must appear in a tight structural relationship with
the controlled position. This dissertation is concerned only with obligatory control in this sense.
See Landau 2000 for more on the distinction, and see also section 1.5.4 below for the relationship
between non-obligatory control and Super-Equi.
d. Matching: \( \emptyset \) (i.e., no SP) and [-SP] are non-distinct on functional heads.

e. PRO and infinitival Agr are anaphoric.

f. PRO, being anaphoric, cannot value unvalued functional heads. (Landau 2000:62)

Landau argues that this set of assumptions, together with (14), derive the facts. (15a–d) set up the crucial asymmetry between PC control (goal = T-Agr) and EC control (goal = PRO) with respect to semantic plurality. Because PRO is a DP, it enters the derivation as either [+SP] or [-SP], and hence under EC control, Agree will give rise to ungrammaticality if PRO’s [SP] value differs from that of its probe. Under PC control, on the other hand, because T-Agr is a functional head, it enters the derivation as \([\emptyset]\SP\), and by (15d), this unspecified value may persist if the probe is [-SP]. This underspecification in turn allows for PRO itself to enter as [+SP] without mismatch. When this happens, partial control obtains.

1.2.3 EC/PC in other theories of control

1.2.3.1 Movement theory of control

A major competing alternative to Landau’s theory of control is the so-called movement theory of control (MTC) (Hornstein, 1999, 2001, 2003; Boeckx & Hornstein, 2003, 2004, 2006a,b, 2008; Boeckx et al., 2010a,b; Hornstein & Polinsky, 2010) (see also Bowers 1973, 1981, 2008; O’Neil 1997; Manzini & Roussou 2000 for similar ideas, and see Culicover & Jackendoff 2001; Landau 2003, 2008a; Rooryck 2008; Ndayiragije 2012; Wood 2012 for criticism\(^2\)). On this view, the \( \theta \)-criterion (requiring a one-to-one mapping between \( \theta \)-role assignments and arguments) is aban-

\(^2\) Since I will ultimately be advocating a version of the MTC just for the class of EC predicates, while maintaining a PRO approach for the PC predicates, it bears mentioning that many of the arguments advanced against the MTC are defused once the MTC is confined to the EC class. To take a recent example, Ndayiragije (2012) presents four novel arguments against the MTC based on data from Kirundi. But the arguments are based almost exclusively on an investigation of the properties of the control predicate _emer_ ‘agree’. If these arguments are all on the right track, then they show only that this particular verb is resistant to a MTC approach, which is exactly what is expected if it is a PC predicate.
doned, and θ-roles are features that can induce movement. The sentence in (16a), for example, has a structure like (16b): the subject John checks one θ-role in [Spec,VP] of leave and another θ-role in [Spec,VP] of hope.

(16) a. John hopes to leave.
    b. \[ IP \text{John} \ VP \text{John} [hopes [IP \text{John} to [VP \text{John leave}]]]] \] (Hornstein 1999:79)

Landau (2003) has argued that the existence of partial control is problematic for MTC in that once the controller and controllee are analyzed as a single linguistic object related by movement, absolute identity is trivially expected. See also Modesto 2010 for reservations about the MTC approach to partial control, using data from Brazilian Portuguese inflected infinitives.

There have of course been efforts toward reconciling MTC with the PC phenomenon. Broadly speaking, these approaches take one of three different tacks. The first tack is to maintain the strong MTC view that all (obligatory) control involves movement but to complicate the PC structures in such a way that the facts come out right. In particular, Hornstein (2003:42–45) suggests that MTC can be reconciled with PC by invoking a meaning postulate licensed by the PC verbs (i.e., those verbs that allow tense mismatches: factive, propositional, interrogative, desiderative) whereby the controlled position is interpreted with the additional material “and some contextually specified others”. By Hornstein’s own admission, this is a brute-force and uninteresting approach, but Hornstein’s point is to show that while PC does not follow from MTC, it is not incompatible with it. Rodrigues (2008) (see also Boeckx et al. 2010b) entertains what is essentially a syntacticized version of Hornstein’s idea. Instead of invoking a meaning postulate, Rodrigues suggests that partial control arises when the subject is adjoined with a null pro that is stranded when the subject raises. (Rodrigues suggests that this null morpheme is akin to the so-called associative morphemes like Mandarin -men and Japanese -tati.) The task then of course is to explain why pro is licensed only under certain control predicates (which for Rodrigues are modal predicates, though see Landau to appear for reservations about this reformulation of the descriptive generalization); Rodrigues leaves
this task to future work. (See also Witkos & Snarska 2008, who argue that an approach along these lines is warranted for understanding partial control in adjuncts.)

The second tack is to question Landau’s empirical generalizations. Boeckx & Hornstein (2004) suggest that PC effects are the consequence of “a special lexical property of meet and a handful of other verbs” (p. 449) and that PC is found even in monoclausal configurations and in uncontro-versial raising contexts such as under the verb seem. (Landau (2008a) responds to this position by arguing that while meet may be special, PC is fully productive in that any predicate can be rendered collective by adjoining together, and that this kind of PC is not found in raising contexts.) Bowers (2008) similarly claims that PC is found in raising and monoclausal contexts, and hence that its proper analysis is independent of the theory of control.

Finally, the third tack is to shrink the scope of MTC so that it applies only to a subset of the constructions standardly analyzed as control, and to analyze the complement set of cases in some other way. Approaches in this vein include Dubinsky & Hamano 2010; van Urk 2010. (See also Barrie 2004, reviewed in section 1.6.3 below.) Dubinsky & Hamano (2010) argue that the EC/PC distinction is keyed not to tensedness, as on Landau’s view, but rather to whether the embedded verb denotes an event description separate from that provided by the matrix verb. The primary evidence comes from the fact that the EC/PC split and its tense (mis)matching concomitants are found not only in to-infinitives but also in gerunds and in nominalizations. They cast this out in the movement theory of control by proposing that an NP can move to a θ-marked position only if it has not passed through [Spec,EvP] — a position that must be passed through when the embedded verb constitutes its own event description. This entails that EC falls under the movement theory of control, whereas PC involves some other mechanism, not discussed by the authors. In a somewhat related vein, van Urk (2010) attempts to combine the relative strengths of the movement theory of control and Landau’s PRO approach to control by arguing that both are correct when reduced to the appropriate set of verbs: EC verbs instantiate control by movement whereas PC verbs instantiate PRO control. The bulk of the empirical support that van Urk marshals for this proposal has to do
with case assignment: EC constructions exhibit ‘case sharing’ whereas PC constructions exhibit ‘case independence’ between the controller and the controlled position.

Although not directly related to the EC/PC split, an interesting empirical phenomenon that has been recruited in support of the movement theory of control is backward control (see especially Polinsky & Potsdam 2002, 2006; Potsdam 2009), i.e., a control construction in which the controller-controllee relationship is such that it is the lower argument rather than the higher that is pronounced. In the following example from the Nakh-Daghestanian language Tsez, a non-overt matrix element \( \Delta \), understood as the agent of the matrix predicate, is obligatorily coindexed with the embedded subject.

(17) \[ \Delta_{ik}^{*k} \text{[kidbäi ziya bişra] yoqsi.} \]
\[ \text{girl.erg cow.abs feed.inf began} \]
\[ \text{‘The girl began to feed the cow.’ (Polinsky & Potsdam 2002:246)} \]

Polinsky and Potsdam take this as evidence in favor of the movement theory of control, since such a theory affords a simple analysis of (17) whereby the relevant movement takes place covertly rather than overtly as in the more familiar English ‘forward control’.

One objection raised by Landau (2008a) regarding the theoretical implications of backward control is that even within languages that exhibit it, it is rare, available only for a handful of verbs, and most commonly aspectual verbs as in the above example. This objection directly relates to my reason for including mention of backward control here: backward control may ultimately lend support for the view of control that I advocate below. In particular, the restriction of backward control to aspectual predicates suggests that as far as the EC/PC split is concerned, being an EC verb is a necessary (albeit not sufficient) condition for giving rise to backward control. Since I am advocating a raising/restructuring approach to EC, it is to be expected that if backward control exists, it will be found within EC rather than PC, since in EC the ‘controller’ and ‘controllee’ are related by movement. The remaining challenge is to understand why backward control is so limited even with the class of EC verbs. That being said, it has also been argued that in Greek...
and Romanian, backward control is possible with all control verbs (Alexiadou et al. 2010, see also Alboiu 2008 on Romanian). However, as we will see below in chapter 6 on Greek, control verbs in Greek (and Romanian) are all EC: those verbs that have meanings that correspond to PC verbs in other languages are in Greek non-control verbs. Therefore, we can still maintain the generalization that backward control is found only among EC predicates, as expected under a raising/restructuring approach to EC.

1.2.3.2 Jackendoff & Culicover 2003

Jackendoff and Culicover (2003:548–551) offer a different take on PC. They suggest that Searle’s (1995) notion of collective intention is relevant. The basic idea from Searle’s work is that one can engage in behavior as part of a joint intention to effect some end. Jackendoff and Culicover provide the example of two individuals working together to carry a table: although the individuals’ roles in the activity are to carry their respective ends of the table, they share the single intention of carrying the whole table.

Jackendoff and Culicover hypothesize that PC “occurs in contexts where the controller holds a joint intention with respect to the activity described by the complement” (p. 549), and they claim that this hypothesis makes two accurate predictions about PC. First, because intention is by definition voluntary, PC should be impossible with states and nonvoluntary activities. The authors present data like (18)–(19) in support of this prediction: (18b) is unacceptable because constitute (unlike form in (18a)) names an involuntary state, and (19b) is similarly unacceptable because in the provided context involving a bomb threat, the action of disbanding is nonvoluntary.

(18) a. Hildy told me that she wants to form an alliance.
   b. ??Hildy told me that she wants to constitute an alliance.

(19) a. The chair hopes to disband soon after calling a vote.
   b. ??The chair hopes to disband soon in reaction to a bomb threat.
It seems to me, however, that the (b) examples are unacceptable for reasons that are independent of conditions on partial control. In particular, the desiderative matrix verbs hope and want are semantically incompatible with nonvoluntary states and activities. As (20a) shows, constitute can be predicated of a singular human referent, but as (20b) shows, if this is embedded under want, the result is just as marked as cases like (18b).

(20) a. John constitutes a great threat to our organization.

b. John wants to constitute a great threat to our organization.

These facts suggest that the (b) examples are odd not because PC is incompatible with involuntary states and activities but rather because hope and want are incompatible with involuntary states and activities.

The second prediction Jackendoff and Culicover claim their account makes is that because intention is inherently nonpast directed, PC should be possible only with control verbs whose complements are future-oriented. Although the authors claim that this is in fact in harmony with Landau’s tense (mis)matching generalization, this is not quite right. Landau’s actual generalization is that PC verbs admit tense mismatches (i.e., non-simultaneity) between the matrix and embedded level. Although one kind of tense mismatch involves a future-oriented embedded clause (notably with the desiderative verbs), another kind of tense mismatch involves a past-oriented embedded clause. In particular, propositional and factive verbs both admit PC and both admit past-oriented embedded clauses, as the following examples from German (21) and Italian (22) demonstrate.

(21) Hans sagte der Maria dass er es bedauerte letzte Nacht gemeinsam gearbeitet zu haben. ‘Hans told Mary that he regretted to have worked together last night.’ (Landau 2000:45)
According to Jackendoff and Culicover, PC should be ruled out in (22a–b) since the embedded clauses are past-oriented. The acceptability of (22a–b) thus suggests that Jackendoff and Culicover’s (2003) approach to partial control is not on the right track.

1.3 Additional correlates of the EC/PC split

Having reviewed Landau’s approach to EC/PC and some of the responses it has generated, I detail in this section four generalizations that are keyed to the EC/PC split but that do not play a central role in most existing approaches. These generalizations will be crucial for motivating the alternative approach to EC/PC presented in section 1.4.

1.3.1 Finite complementation

The first generalization has to do with the distribution of finite complements in English:

(23) **Finite complementation:** PC predicates admit finite complements; EC predicates do not.

This generalization is illustrated in (24)–(25), using a representative sampling of PC and EC predicates.

(24) **PC**

a. John was shocked [that he got an A].

b. John claimed [that he got an A].

c. John wondered [how he would get an A].

d. John wished [that he would get an A].

(25) **EC**
a. *John had [that he would get an A].

b. *John managed [that he got an A].

c. *John started [that he got an A].

Of the 28 examples of English EC predicates listed in Landau 2000:38, a few apparent exceptions to this generalization are found among the implicative verbs; however, these are not genuine exceptions because the variants that admit finite complements are not implicative but rather factive. In (26), remember and forget take infinitival complements and have an implicative semantics: (26a) entails that John solved the problem and (26b) entails that John did not solve the problem. These predicates are also EC, as demonstrated by the infelicity of the adjunct together. In (27), we see that these verbs also allow finite complements. However, here they do not behave as implicative verbs but rather as factive verbs: it is presupposed that Bill solved the problem. The implicative character of the infinitival variant and the factive character of the finite variant are confirmed by the fact that under negation, the inference disappears in the former case but survives in the latter case. In (28), negation reverses the polarity of the entailment so that (28a) entails that John did not solve the problem and (28b) entails that John solved the problem. Because the inference is an entailment, it cannot be suspended, as illustrated by the infelicity of the parenthetical material. In (29), by contrast, the inference that Bill solved the problem survives in both cases, and the presuppositional nature of the inference is confirmed by the felicity of the suspension-inducing parentheticals.

(26) a. John remembered to solve the problem (#together).

b. John forgot to solve the problem (#together).

(27) a. John remembered that Bill solved the problem.

b. John forgot that Bill solved the problem.

(28) a. John didn’t remember to solve the problem (— #if in fact John didn’t solve the problem).
b. John didn’t forget to solve the problem (— if in fact John did solve the problem).

\[(29)\ a. \text{John didn’t remember that Bill solved the problem (— if in fact Bill solved the problem).} \\
b. \text{John didn’t forget that Bill solved the problem (— if in fact Bill solved the problem).} \]

There is one true exception to the generalization: the predicate want supports PC (30a) but disallows finite complements (30b).

\[(30)\ a. \text{John wanted to have lunch together.} \\
b. *\text{John wanted [that he have lunch].} \]

See chapter 3, where I explain this exceptionality of want and relate it to another way in which it is exceptional; namely, it is unique among the PC class in tending to be a restructuring predicate crosslinguistically. (See section 1.3.3 below for more on restructuring.)

1.3.2 Overt embedded subjects

The next generalization keyed to the EC/PC split is as follows:

\[(31)\ \textbf{Overt embedded subjects:} \text{PC predicates admit overt embedded subjects; EC predicates do not.} \]

Half of this generalization follows trivially from the Finite complementation generalization discussed in the previous subsection: since PC predicates all admit finite complements, and finite complements in English require an overt subject, it automatically follows that PC predicates admit overt embedded subjects.³

³ As discussed above, however, there is one PC predicate (namely, want) that disallows finite complementation. But it is not a counterexample to the generalization in (31) because it admits overt embedded subjects via ECM:
The second half of this generalization, however, is more interesting because it does not automatically follow from the previous generalization. In particular, the ECM construction in English makes available overt embedded subjects in the absence of finiteness. But EC predicates as a class uniformly resist ECM, with or without the help of for:\(^4\)

(32) a. *John **managed** (for) **Bill** to solve the problem. \hspace{1cm} \text{IMPLICATIVE}

b. *John **began** (for) **Bill** to solve the problem. \hspace{1cm} \text{ASPECTUAL}

c. *John **had** (for) **Bill** to solve the problem. \hspace{1cm} \text{MODAL}

Both the **Finite complementation** generalization and the **Overt embedded subjects** generalizations imply that Landau’s account of the EC/PC split is incomplete, insofar as his account cannot be extended to make sense of these two generalizations. Landau (2000) does not explicitly treat finite complementation or ECM, and so it is not obvious what his account of the EC/PC split would have to say about these matters. However, in later work, Landau (2004) does make a generalization about the Balkan languages that is relevant to the discussion here. Landau shows that in Balkan languages — which uniformly lack nonfinite complementation — there are two kinds of subjunctives, which Landau calls C(ontrolled)-subjunctives and F(ree)-subjunctives. Verbs that select C-subjunctives require a control relation (33a) whereas verbs that select F-subjunctives allow for disjoint reference between the matrix arguments and the embedded subject (which can be either silent or pronounced) (33b).

(33) a. O Yanis tolmise na figi (*o Kostas).
    the Yanis dared not leave the Kostas

(i) a. *John **wanted** that **Bill** solve the problem.

b. John **wanted** **Bill** to solve the problem.

I will have more to say below in Chapter 3 on why **want** is exceptional among PC verbs in disallowing finite complementation.

4. Among PC predicates, there is variation as to whether ECM is allowed. I will not go into this matter here, but see Moulton 2010 for interesting new work on the semantic correlates of ECM.
1.3.3 Restructuring predicates

The next generalization I will discuss is as follows:

(34) **Restructuring**: EC predicates restructure; PC predicates do not.

This generalization is not new; it is first observed by Wurmbrand (1998) and subsequently discussed by Landau (2000); Wurmbrand (2001, 2002); Barrie (2004); Cinque (2006). But whereas Wurmbrand (1998); Barrie (2004); Cinque (2006) entertain versions of the generalization more or less like (34), Landau (2000); Wurmbrand (2001, 2002) argue for a weaker version of the generalization whereby EC entails restructuring but not vice versa. My aim here is to defend the stronger version; see section 1.6 below for a discussion of the evidence for the weaker version.
Before providing defense for this generalization, I begin with a few general remarks on restructuring. These remarks will for the most part be confined to empirical observations; see section 1.4.2 below for a brief review of theoretical approaches to restructuring. Following standard practice, I use ‘restructuring’ as a blanket term for a class of phenomena whereby two verbs in a tight embedding relationship behave as though they constitute just a single clause with respect to certain syntactic properties. The languages that are the most thoroughly studied with respect to restructuring phenomena are Italian (beginning with Rizzi (1978), who coined the term ‘restructuring’), Spanish (beginning with Aissen & Perlmutter 1976) and German (see especially Bech 1955; Evers 1975; Wurmbrand 2001; Lee-Schoenfeld 2007). But many other languages exhibit restructuring effects as well: for an extensive list of other languages for which restructuring effects have been reported along with relevant citations, see Cinque 2006:47, note 2.

The core restructuring effect in Italian and Spanish is known as ‘clitic climbing’. (See especially Rizzi 1978; Napoli 1981; Burzio 1986; Kayne 1989; Cardinaletti & Shlonsky 2004; Cinque 2006 on Italian and Aissen & Perlmutter 1976, 1983; Luján 1980; Zagona 1982; Zubizarreta 1982; Uriagereka 1995; Bleam 2000 on Spanish. Clitic climbing is also found in Wolof: Torrence To appear) A well-known fact about pronominal clitics in languages like Italian and Spanish is that they attach to the immediate \textit{left} of a finite verb (35a) but to the immediate \textit{right} of an infinitive (35b).

\begin{enumerate}
\item[a.] Lo vedo. ‘I see it.’
\item[b.] vederlo ‘to see it’
\end{enumerate}

Given this generalization, a sentence like (36a) is as expected: \textit{ti} ‘you’ is semantically the indirect object of the embedded infinitive parlare ‘to speak’ and so it appears to its immediate right. In ‘clitic climbing’, however, the clitic may instead appear at the matrix level, as in (36b), as though verrà a parlare ‘will come to speak’ is treated as a single finite unit with respect to clitic placement.

\begin{enumerate}
\item[a.] Piero verrà a parlarti di parapsicologia.
\end{enumerate}
b. Piero ti verrà di parlare di parapsicologia.

‘Piero will come to speak to you about parapsychology.’ (Rizzi 1978:113)

Clitic climbing is not always possible and depends among other things on the embedding predicate: Rizzi (1978) generalizes that modal, aspectual and motion verbs trigger (optional) clitic climbing. A verb like decidere ‘decide’ does not:

(37) a. Piero deciderà di parlartì di parapsicologia.

‘Piero will decide to speak to you about parapsychology.’

b. *Piero ti deciderà di parlare di parapsicologia. (Rizzi 1978:113)

See chapter 2 for a theoretical account of the availability of restructuring as a function of matrix verb choice. I abstract away here from other details of Italian restructuring including auxiliary switch, long NP movement, and their interaction with clitic climbing; see Rizzi (1978); Cardinaletti & Shlonsky (2004); Cinque (2006).

For German, Wurmbrand (2001) identifies the so-called ‘long passive’ as one of the central restructuring effects. (See also Höhle 1978; Bayer & Kornfilt 1990; Kiss 1995; Wöllstein-Leisten 2001; Sabel 2002; Reis & Sternefeld 2004; Schmid et al. 2005; Lee-Schoenfeld 2007.) In this construction, the direct object of the embedded predicate is promoted to the subject position of the embedding predicate. This is illustrated in (38a) for the restructuring predicate versuchen ‘try’, and as we see in (38b), it is ungrammatical with a non-restructuring predicate like planen ‘plan’.

(38) a. dass der Traktor zu reparieren versucht wurde
that the.\text{nom} tractor to repair tried was
‘that they tried to repair the tractor’ (Wurmbrand 2001:19)

b. *dass der Traktor zu reparieren geplant wurde
that the.\text{nom} tractor to repair planned was
‘that they planned to repair the tractor’ (Wurmbrand 2001:36)
In addition, Lee-Schoenfeld (2007), building on Wurmbrand’s work, identifies ‘possessor raising’ as another restructuring diagnostic for German. In the (a) examples in (39)–(41), the bolded DPs illustrate the so-called ‘possessor dative’: a dative case-marked DP that is interpreted as the possessor of the direct object. What the (b) examples show is that when the infinitive is embedded under a restructuring verb like *versuchen* ‘try’, the possessor DP can raise out of the embedded clause. Under a non-restructuring verb like *behaupten* ‘claim’ or *planen* ‘plan’, this is not possible.

(39)  
  a. Tim hätte lieber versucht [seiner Schwester das Radio heile zu machen].  
          ‘Tim would have rather tried his sister’s radio to make it intact to repair.’
  
  b. Tim hätte lieber seiner Schwester versucht [das Radio heile zu machen].

      (Lee-Schoenfeld 2007:99)

(40)  
  a. Tim hat behauptet [der Nachbarin schon den Hof gefegt zu haben].  
          ‘Tim claimed to have already swept the neighbor’s yard.’
  
  b. *Tim hat der Nachbarin behauptet [schon den Hof gefegt zu haben].

      (Lee-Schoenfeld 2007:97)

(41)  
  a. Die Nachbarin hatte geplant [dem Tim dafür das Fahrrad reparieren zu lassen].  
          ‘The neighbor had planned to get Tim’s bike repaired in return.’
  
  b. *Die Nachbarin hatte dem Tim geplant [dafür das Fahrrad reparieren zu lassen].

      (Lee-Schoenfeld 2007:98)

In additional to possessor datives, Lee-Schoenfeld (2007) also proposes another test for restructuring based on the binding properties of the ‘Accusativus cum Infinitivo’ constructions. Since this latter test applies only to constructions in which the embedded infinitive has an overt (accusative) subject and not to canonical subject-control structures which are the primary focus of this dissertation, I will not review it here. I also abstract away from a number of nuances in the German data...
that Wurmbrand uses to motivate a three-way distinction between ‘lexical restructuring’, ‘functional restructuring’, and ‘reduced non-restructuring’. These nuances raise important questions for the view of restructuring that I will ultimately advocate (namely that found in Cinque 2006); see section 1.6.2 below for more on the German data, Wurmbrand’s analysis, and its implications for my core proposals.

I now turn to the relationship between restructuring and the EC/PC split, and in particular, the generalization that EC predicates tend crosslinguistically to be restructuring predicates. In order to demonstrate this claim across a representative set of predicates and a representative set of languages, table 1.1 provides an abridged and reorganized version of Wurmbrand’s (2001:342) table of the restructuring status of selected predicates across German, Dutch, Italian, Spanish, and Japanese. I have changed the table in a few ways: omitting some predicates, reordering the rest, and adding a new column on the left which classifies Wurmbrand’s predicates according to Landau’s semantic typology of control predicates along with their predicted EC/PC status in Landau’s system. Following Wurmbrand’s conventions, + indicates a restructuring predicate, – indicates a non-restructuring predicate, N/A marks cases where independent factors preclude classification, and ± indicates speaker variation and cases where the English verb corresponds to two or more verbs in the target language that are non-uniform with respect to restructuring.

The restructuring diagnostics Wurmbrand uses for this table are as follows:

(42) a. German: long passives
   b. Dutch: verb raising and IPP

5. I have omitted 14 predicates from Wurmbrand’s original table: five object-control verbs (causatives, allow/permit, forbid, recommend, order); three motion verbs (come, go, return); four raising verbs (seem, promise, threaten, appear); one tough adjective (easy), and one verb whose placement in Landau’s typology is unclear to me (redo).

6. According to Wurmbrand, in ‘verb raising’, the infinitive appears to the right of the matrix verb instead of the left, and IPP (Infinitivus Pro Participio) refers to a phenomenon found in some West Germanic languages whereby the matrix past participle in a perfective construction surfaces as an infinitive.
c. Italian and Spanish: clitic climbing

d. Japanese: lack of embedded tense marking

<table>
<thead>
<tr>
<th>Landau’s classes</th>
<th>Wurmbrand’s predicates</th>
<th>Restructuring status (Wurmbrand 2001:342)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>German</td>
</tr>
<tr>
<td>EC: ASPECTUAL</td>
<td>begin</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>continue</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>start</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>finish, stop</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>be about to</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>(be) used to</td>
<td>+</td>
</tr>
<tr>
<td>EC: MODAL</td>
<td>can, may</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>must, need</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>know how</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>other (semi) mods</td>
<td>+</td>
</tr>
<tr>
<td>EC: IMPLICATIVE</td>
<td>manage/succeed</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>forget</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>fail</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>dare</td>
<td>+</td>
</tr>
<tr>
<td>EC: (other)</td>
<td>try</td>
<td>+</td>
</tr>
<tr>
<td>PC: DESIDERATIVE</td>
<td>want</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>intend (=want, mean)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>refuse, reject</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>prefer</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>decide, choose</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>plan</td>
<td>−</td>
</tr>
<tr>
<td></td>
<td>offer</td>
<td>−</td>
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<td></td>
<td>wish</td>
<td>−</td>
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<tr>
<td></td>
<td>propose</td>
<td>−</td>
</tr>
<tr>
<td>PC: FACTIVE</td>
<td>factive</td>
<td>−</td>
</tr>
<tr>
<td>PC: PROPOSITIONAL</td>
<td>propositional</td>
<td>−</td>
</tr>
</tbody>
</table>

Table 1.1: Empirical relationship between EC/PC and restructuring. (Restructuring status data taken from Wurmbrand 2001:342.)

The overwhelming generalization that emerges from this table is that EC verbs restructure but PC verbs do not. Setting aside a few isolated imperfections in the restructuring status of try and the implicative verbs, the one robust exception to the generalization is the desiderative verb want (and intend) which displays restructuring properties in all of the languages in the table yet is PC
according to Landau’s tests. Chapter 3 will be devoted to explaining this and other exceptional facts about want. For the remainder of this chapter, I will assume that the generalization is real and deserves an explanation.

1.3.4 Subject orientation

The final generalization I will consider is the following:

(43) **Subject orientation**: EC predicates do not always entail something about their subject; PC predicates always do.

As the data in (44) show, some EC verbs unambiguously entail something about their subject (‘control’ in the traditional sense) whereas others do not (‘raising’ in the traditional sense); in particular, at least some aspectual verbs are compatible with an expletive subject (44b) as are at least some of the modal class (44c) (with the possible exception of *be able*), whereas implicative verbs are not (44a). (Here I also include *try* (44d) in the discussion because it patterns like an EC verb with respect to the relevant tests but resists classification within Landau’s three categories.) As we see in (45), on the other hand, PC verbs uniformly lack raising uses. (45) is representative of all PC predicates. (In chapter 2 below, section 2.2.2, I provide further confirmation for this conclusion by running a more complete battery of raising/control diagnostics.)

(44) EC

- a. *It managed* to rain. **IMPLICATIVE**
- b. It *began* to rain. **ASPECTUAL**
- c. It *had* to rain. **MODAL**
- d. *It tried* to rain. **TRY**

(45) PC

- a. *It hated* to rain. **FACTIVE**
b. *It **claimed** to have rained.  
   PROPOSITIONAL

c. *It **hoped** to rain.  
   DESIDERATIVE

d. *It **wondered** how to rain.  
   INTERROGATIVE

The traditional analysis of aspectual verbs and modal verbs, dating back to Perlmutter 1970, is that they are ambiguous between raising and control predicates. However, in recent years, a number of scholars have entertained the idea that they are in fact always raising (see Bhatt 1998; Hackl 1998; Wurmbrand 1999 on modal verbs and Rochette 1999; Fukuda to appear on aspectual verbs). One of the most straight-forward motivations for a raising-only approach to aspectual and modal verbs is simplicity. Consider the following data from Bhatt 1998. Bhatt observes that even as the kind of modality is held constant (here, deontic), the bearer of the obligation in a sentence with deontic *have* can either be absent entirely (46a), denoted by the subject (46b), or denoted by some other element in the sentence (46c).

(46)  
a. **We are expecting fifty guests tonight.** There have to be 50 chairs in the living room by 5 p.m. (as said to the party organizers)  
b. **John has to eat an apple today.** (as said as an instruction to John’s caretaker at the day-care)  
c. **Bill has to be consulted by John on every decision.** (*John* being the bearer of obligation)  

(Bhatt 1998:7)

Bhatt concludes from this observation that a control analysis of examples like (46b) is unnecessary: (46a) and (46c) provide independent motivation for a mechanism that establishes the obligation bearer in a deontic *have* sentence, and there is no reason to isolate those cases where the obligation bearer happens to be in subject position and analyze them as having a special syntax. (Many of the syntactic arguments in favor of a raising-only analysis for modal verbs are inconclusive insofar as they establish only that modal verbs are sometimes raising, though there are a few notable exceptions: see Thráínsson & Vikner 1995 on case in Scandinavian, Wurmbrand & Bobaljik 1999
on A-reconstruction, Bhatt 1998 on case in Hindi, Wurmbrand 1999 on passivization, and Barbiers 2002 for a useful overall review of the literature.)

If we accept the conclusion that aspectual and modal verbs are raising-only, what does this mean for the EC/PC split and the **Subject orientation** generalization? I think that there are two possible interpretations. First, one could take this as a relatively uninteresting result, showing only that two classes of verbs happen to have been misclassified by Landau as EC when actually they are raising. The class of EC predicates would thereby be reduced to implicative predicates and *try*, but this shrinking of the scope of EC would not in any way affect one’s analysis of the EC/PC split. Another more interesting interpretation, however, would hold that that the classification of certain raising-only or raising/control-ambiguous predicates as EC is not accidental but rather is telling us something fundamental about the syntax of EC. In particular, one could entertain the view that EC predicates are all syntactically raising predicates, including even the implicative predicates and *try* which unambiguously entail something about their surface subject.

This latter position has two interesting implications, one potentially worrisome, and the other desirable. The potentially worrisome implication is that it entails a radical redefinition of the raising/control distinction. According to Davies & Dubinsky (2004), there are five traditional arguments in favor of the raising/control distinction: distinct thematic structures, interpretation of embedded passives, selectional restrictions, pleonastic subjects, and idiom chunks. And actually, all of these empirical differences reduce to just one generalization: whereas control verbs entail something about one of their arguments in addition to the role that the argument already has in connection with the embedded clause, raising verbs do not.

The desirable implication of the view that *try* and implicative verbs are raising verbs is that such a view would simplify our theory of control by allowing us to generalize that all control is PC and that apparent cases of EC are actually raising. More generally, if we analyze *try* and implicative verbs as raising, then the syntactic distinction between raising and control verbs has nothing to do with subject entailments as on the traditional view but rather has to do with the clustering of
properties that distinguish EC and PC as laid out in this section. The existing literature on raising-only analyses of modal and aspectual verbs paves the way for such an approach, but still does not quite get us there: the crucial extra step that needs to be made is to thinking that a raising analysis is possible even for verbs that always entail something about their surface subject. Chapter 2 makes a proposal along these lines. First, however, the remainder of this chapter is concerned with providing a framework for capturing all of the correlations observed in this section.

1.4 Explaining the correlations

The purpose of this section is to show that Cinque’s (2006:34–35) suggestion that EC verbs are uniformly functional heads in the inflectional layer of the clause goes a long way toward capturing all of the correlations described above. Before discussing this proposal, I provide a brief background on Cinque’s ‘cartography project’ and on Cinque’s approach to restructuring in comparison with other approaches.

1.4.1 Background on the cartography project

The fundamental hypothesis of the so-called ‘cartography project’, as it pertains to the syntax of IP, is that there is a universal hierarchy of rigidly ordered functional heads in the inflectional layer of the clause. A portion of the proposed hierarchy is given in (47).

(47)  MoodP_{speech act} > MoodP_{evaluative} > MoodP_{evidential} > ModP_{epistemic} > TP(Past) > TP(Future) > MoodP_{irrealis} > ModP_{alethic} > AspP_{habitual} > AspP_{repetitive(I)} > AspP_{frequentative(I)} > ModP_{volitional} > AspP_{celerative(I)} > TP(Anteror) > AspP_{terminative} > AspP_{continuative} > AspP_{retrospective} > AspP_{proximative} > AspP_{durative} > AspP_{generic/progressive} > AspP_{perspective} > ModP_{obligation} > ModP_{permission/ability} > AspP_{completive} > VoiceP > AspP_{celerative(II)} > AspP_{repetitive(II)} > AspP_{frequentative(II)}  

(Cinque 2006:12)
In Cinque 1999, evidence for a hierarchy like (47) comes from crosslinguistic similarities in the ordering of verbal affixes and semantically corresponding clausal functional heads and adverbs. On the hypothesis that adverbs must be licensed in the specifier position of a semantically corresponding functional head, the ordering restrictions can be captured by appealing to a universal hierarchy like (47). In Cinque 2006, the evidence is expanded to include semantically corresponding restructuring verbs, a topic I turn to presently.

For useful overviews of issues pertaining to the cartographic approach to IP structure, see Cinque & Rizzi 2008; Shlonsky 2010. One interesting and open question raised by the cartography project has to do with what determines why the ordering is the way it is. Cinque & Rizzi (2008) suggest that it may be partly but not wholly reducible to semantic considerations. I will remain largely neutral on this matter, and in fact, many of the details of the ordering in the hierarchy will not be crucial to the account that I develop (except insofar as they support the functional approach to restructuring), with one important exception: in the analysis to be developed in chapter 2, the relative ordering of heads above or below TP(Past) will be crucial. I leave it to future work to establish whether the four heads above TP(Past) can be shown to constitute a semantic natural class to the exclusion of the other heads.

1.4.2 Functional restructuring

Here I review Cinque’s (2006) theoretical approach to restructuring, which, by way of introduction, is usefully contrasted with other salient approaches to restructuring.7 What seems to unify all existing approaches to restructuring is the intuition that restructuring phenomena like Romance clitic climbing and German long passivization (see section 1.3.3 above for data) reflect monoclausality: the ordinary clause-boundness of processes like clitic placement and passivization is suspended when an infinitive is embedded under certain kinds of predicates. But there are many possibilities

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7. Here I single out just three salient approaches. For a more complete survey of various approaches to restructuring and their theoretical relationship to one another, see Wurmbrand 2001.
for how this monoclausality is achieved. The ‘complex predicate’ approach associated with Rizzi 1978, for example, holds that the relevant sentences are ‘restructured’ in such a way that that matrix and embedded verbs constitute a single syntactic unit, so that a sentence like (48) ends up having a structure like (49).

(48) Piero ti verrà a parlare di parapsicologia.

‘Piero will come to speak to you about parapsychology.’ (Rizzi 1978:113)

(49) VP
    /\ 
   /   
  V  PP 
     verrà a parlare di parapsicologia

The ‘truncated complement’ approach, popularized recently by Wurmbrand (2001) and illustrated in (50), holds that the matrix verb constitutes its own verbal projection but that its complement is something less than a full CP: a VP or in some cases (what Wurmbrand calls ‘reduced non-restructuring’) a vP or a TP.

(50) VP
    /\ 
   /   
  V  vP/TP 
     verrà a parlare di parapsicologia

Cinque’s (2006) approach to restructuring, in contrast, follows a tradition that seeks to understand restructuring predicates as being ‘light’: modal/auxiliary-like, lacking their own argument structure and (though more arguably) lacking their own event structure (Napoli, 1981; Rochette, 1990; Rosen, 1991). On this view, it is the infinitive that constitutes the main vP of the sentence, and the restructuring verb is part of the extended projection of that vP, as illustrated in (51).
On Cinque’s version of this approach, restructuring predicates directly realize semantically corresponding functional heads in the inflectional layer of the clause, and thereby instantiate monoclausal raising structures. An important conceptual motivation for this view of restructuring is that it provides a framework for explaining why only certain verbs are restructuring verbs. Although there is some cross-linguistic variation in the membership of these verbs in languages that exhibit overt restructuring effects, there is also striking agreement, and the core generalization for Italian is that the restructuring verbs are modal verbs, aspectual verbs, and verbs of motion. (See also Fukuda to appear for a functional head analysis of aspectual verbs based on data from Japanese.) On Cinque’s view of restructuring, this correlates with the fact that it is precisely these classes of verbs that have meanings which in some languages get realized as inflectional affixes or clausal functional heads.\(^8\) (See, however, Chapter 2, where I will defend and analyze a more nuanced version of this generalization.)

An important source of empirical support for Cinque’s proposal has to do with the constraints on the relative ordering of restructuring verbs: when one restructuring verb is embedded under another, their order is fixed, and the ordering found mirrors that independently motivated by the ordering of inflectional affixes and adverbs as investigated in Cinque 1999. For example, the following data show that when *tendere* ‘tend’ and *volere* ‘want’ are used together, the former must precede the latter. Assuming that *tendere* occupies the functional head \(\text{Asp}_{\text{predispositional}}\), *volere* occupies \(\text{Mod}_{\text{volitional}}\), and these two heads are ordered \(\text{Asp}_{\text{predispositional}} > \text{Mod}_{\text{volitional}}\), the asymmetry in (52) follows.

\(^8\) (From an Indo-European perspective, this is clearest in the case of modality and aspect; for motion, Cinque (2006:47) notes that many languages have so-called ‘andative’ or ‘distantive’ affixes which correspond to English ‘come/go and’.)
(52)  

a. Lo tenderebbe a voler fare sempre lui.
   ‘He would tend to want to always do it he himself.’

b. *Lo vorrebbe tendere a fare sempre lui.
   ‘He would want to tend to always do it he himself.’ (Cinque 2006:18)

Cinque furthermore argues for the strong claim that even in the absence of ‘transparency effects’ like clitic climbing, restructuring verbs *always* realize functional heads in monoclusal raising structures; in other words, both (53a) and (53b) have the same basic structure. (See, however, Cardinaletti & Shlonsky 2004 for the weaker view that Italian restructuring predicates have both lexical and functional uses.)

(53)  

a. Piero verrà a parlarti di parapsicologia.

b. Piero ti verrà a parlare di parapsicologia.
   ‘Piero will come to speak to you about parapsychology.’ (Rizzi 1978:113)

On this view, rather than having to countenance both lexical and functional varieties for each restructuring verb, we analyze them as uniformly functional, and understand the variation between (53a) and (53b) via the proposal that in monoclusal structures, clitics may either attach to the left of the finite verb or to the right of the nonfinite one.  

9. This view is apparently challenged by the observation due to Rizzi (1978) that multiple clitics must remain together, whether ‘low’ (ia) or ‘high’ (ib). Splitting them so that only one ‘climbs’, as in (ic–d), is ungrammatical.

(i)  

a. Piero voleva darmelo.
   ‘Piero wanted to give it to me.’

b. *Piero me lo voleva dare.

c. *Piero lo voleva darmi.

d. *Piero mi voleva darlo. (Rizzi 1978:136, note 26)

In response to this fact, Cinque cites Kayne (1989), who notes that the ban on ‘clitic splitting’ is found in both Italian and Spanish, but it is not universal in Romance: there are dialects of Romance where ‘clitic splitting’ is allowed. Cinque suggests that this point of variation has to do with whether or not clitics ‘form a cluster’ (the second one adjoining to the first one).
it affords, Cinque offers two main arguments in favor of this view. First, the restrictions on the relative ordering of restructuring verbs mentioned above hold even in the absence of transparency effects. (54), for example, shows that even in the absence of clitic climbing, *solere* ‘to be used to’ must be ordered before *provare* ‘to try’.

(54) a. Suole provare a farle/provarle a fare da solo.
   ‘He is used to trying to do them by himself.’

b. *Prova a soler farle/solerle fare da solo
   ‘He tries to be used to doing them by himself.’ (Cinque 2006:34)

The second piece of evidence Cinque offers in favor of the view that restructuring predicates are functional even in the absence of transparency effects is the distribution of exhaustive and partial control. As already demonstrated above, EC predicates tend to be restructuring predicates whereas PC predicates tend to be non-restructuring predicates. Cinque reasons that if EC positively correlates with restructuring and restructuring is monoclausal raising, then the ‘EC’ effect follows since the ‘controller’ and ‘controllee’ constitute members of an A-chain. By the same token, PC becomes a general property of ‘true’ biclausal control. The crucial point is that the EC effect holds even in the absence of transparency effects. So to maintain the view that EC reduces to raising, we need to say that even in the absence of transparency effects, restructuring verbs are functional and instantiate monoclausal raising structures. See also section 1.5.3.2 below for a novel argument from the licensing of negative indefinites that the presence or absence of clitic climbing does not affect the monoclausality of Italian restructuring predicates.

Cinque’s suggestion that restructuring obtains even in the absence of transparency effects (for the relevant class of predicates) is particularly attractive from the perspective of the goals of this dissertation, since I want to provide a universal account of why the correlations seen in the previous section hold. In particular, Cinque’s suggestion opens up the possibility that even in languages like English, where overt restructuring effects are hard to come by, those verbs whose meanings
correspond to the relevant functional heads in the inflectional layer are still functional restructuring verbs. Potentially worrisome under such an approach are languages like Greek with uniformly finite complementation. In the context of a discussion of Salentino and Serbo-Croatian, however, which are similar to Greek in this regard, Cinque (2006:21) suggests that person/number agreement on the lower verb does not necessarily entail biclausality but could simply reflect a requirement on morphological word-hood in some languages. I will develop this idea more thoroughly below in chapter 6 in Greek. On this view, overt restructuring effects such as Romance clitic climbing are just language-specific windows into a crosslinguistically uniform syntax that the relevant verbs participate in.

Cinque’s analysis of course raises a number of important questions, many of which he addresses himself and many of which will come up over the course of the remaining chapters in this dissertation. But one issue that is of particular relevance here is the consequence that restructuring predicates are all syntactically raising predicates rather than control predicates. As Cinque notes, this seems obviously wrong for prototypical restructuring verbs like try, manage, and want. Cinque provides syntactic evidence from Italian ne-cliticization and impersonal si that similar verbs in Italian pattern with raising predicates (see chapter 2, in particular section 2.2.1, for discussion), but does not tackle the question of how to rule out sentences like (55) other than a suggestion that it could follow from the semantics of such verbs. However, it is far from obvious how this would work: while it is conceivable that the verb want, for example, requires as part of its meaning that there be a sentient being in a particular kind of mental state, it is not clear how we could ensure that it is in particular the subject position that satisfies this requirement, if the verb does not have access to that position as a semantic argument. One of the goals of chapter 2 will be to explain these facts.

(55)  a. *It tried to rain.
   b. *It wanted to rain.
   c. *It managed to rain.
1.4.3 The core proposal

We now have all the empirical generalizations and conceptual pieces in place to present the core proposal. (56) summarizes the full set of correlations that we want to capture. With this in mind, the core proposal is in (57).

\[(56)\quad\begin{align*}
&\text{a. Finite complementation: PC predicates admit finite complements; EC predicates do not.} \\
&\text{b. Overt embedded subjects: PC predicates admit overt embedded subjects; EC predicates do not.} \\
&\text{c. Restructuring: EC predicates restructure; PC predicates do not.} \\
&\text{d. Subject orientation: EC predicates do not always entail something about their subject; PC predicates always do.}
\end{align*}\]

\[(57)\quad\text{Core proposal: All of the correlations in (56) follow from the proposal that EC verbs are functional heads in the inflectional layer of the clause whereas PC verbs are full lexical verbs that take CP complements.}\]

As discussed above, the proposal in (57) is anticipated by Cinque (2006:34–35) who, although not working with the full set of correlations in (56), proposes that his functional approach to restructuring (and more specifically, the strong version that restructuring verbs realize functional heads even in the absence of overt restructuring effects) is supported by the EC/PC split. In particular, Cinque suggests that EC is a direct consequence of the raising character of functional restructuring. A sentence like (58a), for example, has a structure like (59), whereby the ‘controller’ and ‘controllee’ (now misnomers in this kind of example) are related via A-movement and hence require strict identity.\(^{10}\) An example like (58b), on the other hand, has a true control analysis as in

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\(^{10}\) Two important syntactic questions raised by the structure in (60) are: What is the syntax of infinitival marker to? And how is it that manage (and other EC verbs) inflect like lexical verbs if they are in fact functional heads? I will discuss both of these questions in section 1.5.2 below.
A simplifying consequence of this view is that it is a general property of true control that PRO admits a non-strict (more specifically, superset) relation with respect to its binder. In other words, whenever there is PRO, Partial Control is possible. (See 1.5.1 for discussion of why this is the case.)

(58)  
   a. *John managed to gather at noon.  
   b. John hoped to gather at noon.

(59) PARTIAL CONTROL predicates = CP-complement w/ PRO subject

    John₁
    V       CP
     |       
   hope    PRO₁(+)

(60) EXHAUSTIVE CONTROL predicates = vP-complement w/ subject raising

    John₁
    F       vP
     |       
   try    John⁺

Now I spell out in a bit more detail how this proposal captures all of the relevant correlations.

**Finite complementation:** On the proposal being entertained, EC predicates uniformly embed vP complements and PC predicates uniformly embed CP complements. Since finite complements are uncontroversially CPs (or at least TPs), it is to expected that PC but not EC predicates can embed finite complements. In fact, the proposal shows that the distribution of finite and nonfinite CPs is

11. A proper subset of the EC class (in particular try and aspektual predicates like begin, start, and continue) admit gerundive as well as infinitival complements. (And there are also predicates like finish which require a gerund: John finished {doing / *to do} his homework.) An investigation of the distribution of gerunds is beyond the scope of the dissertation, but see Pires (2001), who in fact proposes that a subset of gerunds — including those that function as complements to aspektual predicates and try — are vPs whose subject raises into matrix subject position, precisely as I am proposing for infinitival complements to these same predicates. As Pires shows, gerundive complements to these predicates disallow overt embedded subjects (unlike ‘clausal gerunds’ in the sense of Pires 2007) and also disallow matrix-embedded tense mismatches. See chapter 4 for more on infinitival tense, and see also in particular section 4.5 for the relevance of the infinitive/gerund distinction for factivity.
very simple: PC predicates uniformly embed CPs, and it does not need to be stated separately for each predicate whether this CP is finite or not. Both finite and nonfinite CPs are admitted.

**Overt embedded subjects:** On the standard view, inflectional heads do not introduce arguments. Hence in an EC structure — where the EC predicate realizes a functional head — there can be no arguments other than those introduced by the complement to the EC predicate. Since an overt embedded subject always entails an additional matrix subject, it follows that EC predicates must disallow overt embedded subjects. (See also Rosen 1991, who argues that Romance restructuring verbs are light verbs that lack their own argument structure and event structure.)

**Restructuring:** This correlation is central to the proposal. Taking restructuring effects to be overt signals of monoclausality, it is expected that restructuring effects are found in EC (monoclausal) structures but not in PC (biclausal) structures.

**Subject orientation:** PC predicates are lexical verbs that select for their own subject. Hence, like most other lexical verbs, they entail something about their subject. EC predicates, on the other hand, are raising predicates. Hence, they need not entail anything about their surface subject. (Indeed, on the traditional view, they necessarily do not entail anything about their surface subject. Given the EC status of predicates like *try* and *manage*, however, this view is too strong. See Chapter 2 for more on this matter.)

Before closing this section, I would like to point out an analogy between the overall spirit of the reasoning here and that found in Adger and Ramchand’s (2005) study of *wh*-dependencies. Adger and Ramchand argue, following closely the reasoning and data from McCloskey 1979, that there are two theoretically possible ways for *wh*-dependencies to arise: via movement (as on the traditional view) or via an agreement relation between the complementizer and a phonologically null pronoun *pro*. They furthermore argue that locality effects (i.e., island constraints) cannot be used to adjudicate between the two possibilities because “Move is parasitic on Agree . . . any locality effect can be construed as deriving from constraints on the Agree operation . . . rather than on the Move operation itself” (p. 162). Consequently, they claim, we should look for syntactic and semantic
identity effects, which should obtain in a movement relation (on the copy theory of movement) but do not necessarily obtain in an agreement relation. This is exactly the spirit of the argumentation here: Exhaustive Control is a (semantic) identity effect and hence consistent with a movement relation between the controller and controllee; Partial Control is a (semantic) non-identity effect and hence lends support for an agreement relation between the controller and controllee.

This analogy suggests that we should also be looking for syntactic (non-)identity effects that can be used to test the proposal. In this connection, there is in fact a sizable literature on the relationship between control and case (Sigurdsson, 1991; Landau, 2003, 2006; Boeckx & Hornstein, 2006a; Sigurdsson, 2008; Landau, 2008b; Bobaljik & Landau, 2009; Boeckx et al., 2010b; van Urk, 2010; Wood, 2012). This literature investigates the concomitants of ‘case identity’ vs. ‘case independence’, i.e., whether the case of the controller matches the inferred case of the controlled position (the case of the controlled position being inferred from clause-local floating quantifiers and secondary predicates in languages with rich case morphology like Russian and Icelandic). The facts are complicated and beyond a full treatment here, but it is worth pointing out that from what little is known about the relationship between EC/PC and case identity/independence (Landau, 2008b; van Urk, 2010), it appears that the expected correlation obtains: Exhaustive Control favors case identity and Partial Control favors case independence. A caveat, however, is that EC generally does not pattern with canonical raising predicates with respect to case assignment: when quirky Case is involved in a language like Icelandic, then typically in a raising construction, the lower (embedded) predicate determines the case of the matrix subject, whereas typically in EC, the EC predicate itself determines case. More research is needed here. (See also Alexiadou et al. 2010, who argue for a movement analysis of Greek control that nonetheless evidences case independence. They suggest that in order to explain the data, one must countenance multiply case-marked A-chains. For a more general discussion of the idea that DPs can be multiply case-marked, see Merchant 2006.)

These matters aside, Cinque’s suggestion makes sense of the correlations between EC/PC, the distribution of finite complements, the distribution of overt embedded subjects, (non-)restructuring,
and contrasts in subject orientation. Some of the many questions that remain under this view will form the basis for the remaining chapters in the dissertation. Before getting to these questions, however, I discuss in the next section a few refinements and elaborations to the core proposal, and then in the following section I present a review of some other approaches to the relationship between EC/PC and restructuring that have emerged recently.

1.5 Refinements and elaborations

1.5.1 Why does PRO allow Partial Control?

A consequence of the analysis I argue for is that the availability of partial control becomes a fully general property of PRO. But why should PRO have this property? Here, I suggest that it reduces to a more general property of (at least certain kinds of) bound pronouns. In particular, partial control is reminiscent of partial binding, a phenomenon so named and discussed by Rullmann (2004), drawing on an observation due to Partee (1989) (see also Rullmann 2003; Heim 2008; Kratzer 2009). In this phenomenon, the interpretation of a bound pronoun — in addition to covarying with a quantifier antecedent — includes some other entity as well, constrained by the person features on the bound pronoun. In (61a), for example, us has as its antecedent every woman plus the speaker S; in (61b), you guys has its antecedent every woman and the addressee A, and in (61c), them has as its antecedent every woman and John. It is also possible for the second antecedent to covary with the interpretation of the first, as in (62).

(61)  
\[
\begin{align*}
\text{a. Every woman}_3 \text{ I}_5 \text{ date wants us}_3\{S,3\} \text{ to get married.} \\
\text{b. Every woman}_3 \text{ you}_A \text{ date wants you guys}_4\{4,3\} \text{ to get married.} \\
\text{c. Every woman}_3 \text{ John}_5 \text{ dates want them}_5\{5,3\} \text{ to get married.}
\end{align*}
\]

(62)  
Every woman\textsubscript{3} told her husband\textsubscript{5} that they\textsubscript{3}\{5,3\} should invest in the stock market.

(Rullmann 2004:164)
(63) forms a useful minimal pair with (61c) and illustrates the close parallelism between this property of bound pronouns and the availability of partial control with PRO: the overt bound pronoun _them_ in (61c) is amenable to the same kind of interpretation as PRO in (63). See also the minimal pair in (64): (64a) has an interpretation in which _they_ is bound by _every committee head_ yet also includes some contextually salient (and possibly but not obligatorily covarying) singular or plural entity _C_, precisely analogous to the way partial control works in (64b).

(63) Every woman₃ John₅ dates wants PRO₃₅ to get married.

(64) a. Every committee head₃ hoped that they₃₅ would gather at noon.

   b. Every committee head₃ hoped PRO₃₅ to gather at noon.

I conclude that the availability of partial control with PRO may relate more generally to its status as a bound pronoun. That being said, two important qualifications are in order. First, it bears emphasizing that PRO does differ from overt bound pronouns in involving semantic rather than syntactic plurality. Whereas PRO does not license plural anaphors like _each other_ (65a) (Landau 2000, see also the discussion in section 1.2.1 above), an overt plural bound pronoun does (65b).

(65) a. *Every woman John dates wants to be with each other all the time.

   b. Every woman John dates wants them to be with each other all the time.

The second qualification is that, if my analysis of Exhaustive Control structures in chapter 2 below is correct, then partial control cannot reduce to a fully general property of all bound pronouns. In order to capture the apparent control properties of the Exhaustive Control class, I will propose below that predicates like _try_ incorporate a silent bound pronoun as part of their meaning. Since Exhaustive Control structures by definition require absolute identity between the controller and the controllee, this implies that the silent bound pronoun proposed as part of their analysis differs from PRO and the overt pronouns in Rullmann’s examples in not allowing partial control/binding.
1.5.2 Functional restructuring and English verbal morphosyntax

Two important syntactic questions raised in adopting a structure like (66b) for a sentence like (66a) are: What is the syntax of the infinitival marker *to*? And how is it that *manage* (and other EC verbs) inflect like lexical verbs if they are in fact functional heads?

(66) a. John managed to open the door.

b. FP
   ┌─ John₁
      │   F’
      │  └─ manage
      │       └─ FP
            │     └─ to open the door

In what follows, I discuss these two questions in turn.

1.5.2.1 The status of infinitival marker *to*

An initially attractive idea would be to hypothesize that in syntactic contexts like (66), *to* constitutes a prefix on the verb. Indeed, the German and Dutch equivalents of infinitival *to* (*zu* and *te* respectively) have a prefixal status, as evidenced by their position in between the verb and its particle in verb-particle constructions (Jason Merchant, p.c.).

(67) a. Er versuchte, mich an[-]zu[-]rufen.
    he tried me up-to-call
    ‘He tried to call me up.’

b. Hij probeede me op te bellen.
    he tried me up to call
    ‘He tried to call me up.’
However, at least three considerations undermine a prefixal approach to English infinitival *to*. First, the material following *to* can be coordinated (68a). Second, the material following *to* can be elided (68b) (infinitival VP ellipsis: see Lobeck 1995; Aelbrecht 2010; Thoms 2010). Third, floating quantifiers, negation, and adverbs can intervene between *to* and the verb (68c). (According to Los 2005, these three properties of infinitival *to* emerged in Middle English. Prior to this, Los suggests that *to* was in fact a prefix. )

(68)  
   a. John managed to [open the door and walk outside].
   b. John managed to [open the door], and I managed to [ ] as well.
   c. They managed to {all/not/quickly} get in trouble.

These facts suggest that *to* is an independent word sitting in the main spine of the clause, and the next question is where exactly in the clause it sits. On the standard view, the complementary distribution between infinitival *to*, emphatic *do*, and modal auxiliaries is taken as evidence that *to* sits in Tense (see e.g. Adger 2003:162–164). However, Wurmbrand (2001) — building on a suggestion by Travis (1994, 2000) — presents an argument for the view that *to* sits lower than T. In particular, whereas negation is lower than Tense in English, there is evidence that negation is *higher* than *to*. The argument is based on the set of facts in (69). (69a–b) show that *to* can appear either to the left or to the right of negation. Interestingly, however, under VP-ellipsis, only the ordering *not* < *to* is permitted (69c–d). Furthermore, the ungrammaticality of (69d) cannot reduce to a ban on *not*-adjacent VP-ellipsis, as (69e) shows that this is acceptable with an auxiliary verb. (See, however, Thoms 2010 and references therein for a review of important properties that distinguish infinitival VP-ellipsis from finite VP-ellipsis.) The facts make sense, however, on the view that (69a) involves sentential negation whereas (69b) involves constituent negation, and only the former type licenses ellipsis. (And see Potsdam 1997 for independent evidence from English subjunctive complements that only sentential negation and not constituent negation licenses VP ellipsis.) Since sentential negation is below Tense, it follows that *to* must sit below Tense as well.
If the above argumentation is on the right track, then *to sits below Tense and hence is consistent with the view that infinitival complements to EC predicates do not project Tense. The possibility of passive infinitives with EC predicates (70), however, suggest that *to sits above the head that regulates voice alternations.12 (Though see Lasnik & Fiengo 1974 for the claim that under certain control predicates including *try and *manage, *be passives are degraded.)

Following Collins (2005) in separating v (i.e., the head that determines the (in)transitivity of the verb) from Voice (i.e, the head that regulates active/passive voice alternations), I tentatively suggest a premovement structure like (71b) for the sentence in (71a).13

(12) The existence of passive infinitives, as well as negative infinitives and perfective infinitives (see chapter 4 for a discussion of the latter) are attested since Middle English: see Tanaka 2007 and references therein.

(13) In order to handle German long passives like (i), it may be necessary to say that in such cases, Voice sits above versucht ‘tried’.

(i) dass der Traktor zu reparieren versucht wurde
    that the.\textit{nom} tractor to repair tried was
    ‘that they tried to repair the tractor’ (Wurmbrand 2001:19)

In this connection, crosslinguistic variation in the acceptability of long passives may in fact be reducible to crosslinguistic variation in the height of Voice. (See also Cinque 2003 for a similar suggestion.)
A consequence of this analysis is that the complement to an EC predicate may be larger than vP, including at least Voice, a separate projection for to, and an optional Neg projection as well.14 But as long as T and C are the crucial indicators of ‘clausehood’, we can maintain the view that EC is monoclausal.15

14. As evidenced by minimal pairs like (i), another consequence of this analysis is that negation may occupy more than one position in the clause.

(i) a. John didn’t try to do it.
   b. John tried not to do it.

For discussion, see Cinque 1999:sect 5.4, as well as chapter 6 (section 6.5.3) below, where evidence from Greek, German and Italian shows that restructuring is compatible with multiple negation sites.

15. This may also be analogous to the way so-called ‘prepositional complementizers’ like a and di are found even in restructuring configurations in Italian (Cinque 2006:45). Another interesting case is Belfast English, where the sequence for to is licit without an intervening DP. (ia) could be analyzed as involving two separate particle projections in the spine of the tree. Furthermore, the fact that the same phenomenon is found in canonical raising contexts like (ib) reinforces the plausibility of a (monoclausal) raising approach to (ia).

(i) a. I tried for to get them. (Henry 1995:84)
   b. John seems for to be better. (Henry 1995:86)
1.5.2.2 Verbal inflectional morphology

The functional restructuring approach to Exhaustive Control predicates is seemingly undermined by the fact that these predicates inflect the way main verbs do (72), unlike modal auxiliaries (73). On the traditional view, the complementary distribution between verbal inflection and auxiliarihood is cashed out by analyzing these categories as competing for a single position in the clause (e.g., AUX, as in Akmajian et al. 1979).

(72) John tries/manages/begins to open the door.

(73) *John cans/musts/shoulds open the door.

However, at least three kinds of considerations problematize the putative association between the capacity/requirement for inflection and main verb status. The first consideration is diachronic: according to Warner (1993), auxiliaries are identifiable as a distinct word class even as far back as Old English, when they used to inflect like main verbs. The second consideration is crosslinguistic: cognates of the English modals like German können and müssen and Dutch kunnen and moeten (i.e., ‘can’ and ‘must’) inflect like main verbs. Finally, the third consideration is internal to modern-day English: the aspectual auxiliaries have and be inflect like main verbs even though they otherwise display auxiliary verb syntax (see e.g. Roberts 1985). Taken together, these considerations suggest that it is the non-inflecting English modals like can and must rather than (what is for me) the inflecting functional heads like try and manage that are the puzzle. Consequently, I suggest that it is an accident of modern-day English that the modal auxiliaries are irregular in having invariant forms.
1.5.3 Semantic diagnostics for monoclausality

1.5.3.1 Inverse scope and ACD

According to Farkas & Giannakidou (1996) (see also references therein), inverse scope with universal quantifiers is ordinarily clause-bound: a universal quantifier in an embedded clause cannot take wide scope over a matrix quantifier. See for example the contrast in (74). The monoclausal example in (74a) has a reading whereby for every problem \( x \), at least one person (possibly covarying with \( x \)) solved \( x \). The biclausal example in (74b), however, cannot mean that for every problem \( x \), at least person (possibly covarying with \( x \)) said that Bill solved \( x \).

(74)  a. At least one person solved every problem. \( \forall > \exists \)

   b. At least one person said that Bill solved every problem. \( ^*\forall > \exists \)

Inverse scope out of controlled complements has been subject to very little systematic investigation. Hornstein (2000) (revising an earlier claim in Hornstein 1998 that inverse scope of a universal quantifier out of a controlled complement is impossible) reports that “which verbs tolerate this [inverse scope of a universal quantifier out of a controlled complement] is somewhat idiosyncratic among speakers though all speakers allow this for some control verbs” (p. 140, note 9).

The following data suggest, however, that this apparent idiosyncrasy conceals a systematicity: those predicates that on the current analysis instantiate monoclausal raising structures appear to tolerate inverse scope much more easily than those predicates that on the current analysis instantiate biclausal control structures. I caution, however, that the judgments are quite subtle, and I include (75)–(76) here primarily as stimuli, in the hope of inspiring more systematic investigation of this
matter in the future.\footnote{See also Keshet 2008 who — building on earlier work in temporal semantics by Abusch (1988) and Kusumoto (2005) — argues that there is an intermediate scope position between some matrix implicative predicates and their infinitival complement: in (i), the direct object \textit{any team that lost in the first round} must remain in the scope of negation for NPI-licensing, but for Keshet, it must also scope over \textit{pick} to accommodate the available ‘later-than-infinitive’ reading whereby my picking is temporally prior to the teams losing.}

(75)  
\begin{enumerate}
    \item At least one person wanted to solve every problem. \quad \forall > \exists
    \item At least one person had to solve every problem. \quad \forall > \exists
    \item At least one person tried to solve every problem. \quad \forall > \exists
    \item At least one person managed to solve every problem. \quad \forall > \exists
    \item At least one person started to solve every problem. \quad \forall > \exists
\end{enumerate}

(76)  
\begin{enumerate}
    \item At least one person was shocked to have solved every problem. \quad \exists \forall > \exists
    \item At least one person claimed to have solved every problem. \quad \exists \forall > \exists
    \item At least one person wondered how to solve every problem. \quad \exists \forall > \exists
    \item At least one person hoped to solve every problem. \quad \exists \forall > \exists
    \item At least one person planned to solve every problem. \quad (?) \exists \forall > \exists
\end{enumerate}

See also chapter 6 (section 6.4.2) for similar facts in Greek.

A closely related empirical domain has to do with matrix vs. embedded interpretations of antecedent-contained deletion (ACD) structures (see especially May 1985; Baltin 1987; Larson & May 1990; Hornstein 1994; Kennedy 1997). The antecedent-contained deletion in (77) has only

(i) \quad I managed not to pick any team that lost in the first round.

A full investigation of what is at stake in this kind of analysis would take us too far afield; here I will simply point out that the uncontroversially monoclausal variant in (ii) seems to have the same NPI-licensing and temporal ordering properties as (i). This suggests that whatever the right analysis is for (i), it should be consistent with a monoclausal syntax.

(ii) \quad I did not pick any team that lost in the first round.
an embedded (77a) and not a matrix (77b) interpretation.

(77) Tim said that Joe solved every problem Bill did $\Delta$.
    a. = Tim said that Joe solved every problem Bill solved.
    b. $\neq$ Tim said that Joe solved every problem Bill said Joe solved.

But under some conditions, as in (78), both matrix (78a) and embedded (78b) interpretations are available.

(78) Tim wanted to solve every problem Bill did $\Delta$.
    a. = Tim wanted to solve every problem Bill solved.
    b. = Tim wanted to solve every problem Bill wanted to solve.

Hornstein (1994) suggests that what is crucial is whether the matrix predicate is a restructuring predicate. If this is correct, then the prediction is that the examples in (79) should all support a matrix interpretation whereas the examples in (80) should support only an embedded interpretation. As with the inverse scope facts, the judgments are subtle, but the general pattern seems to be one in which the ‘monoclausal’ predicates support both matrix and embedded interpretations under ACD (79) whereas the ‘biclausal’ predicates tend to favor an embedded interpretation (80).

(79) a. Tim wanted$_{M}$ (matrix) to solve$_{E}$ (embedded) every problem Bill did $\Delta_{M/E}$.
    b. Tim had$_{M}$ to solve$_{E}$ every problem Bill did $\Delta_{M/E}$.
    c. Tim tried$_{M}$ to solve$_{E}$ every problem Bill did $\Delta_{M/E}$.
    d. Tim managed$_{M}$ to solve$_{E}$ every problem Bill did $\Delta_{M/E}$.
    e. Tim started$_{M}$ to solve$_{E}$ every problem Bill did $\Delta_{M/E}$.

(80) a. Tim was shocked$_{M}$ to have solved$_{E}$ every problem Bill was $??\Delta_{M}$ / did $\Delta_{E}$.
    b. Tim claimed$_{M}$ to have solved$_{E}$ every problem Bill did $\Delta_{E}$.
    c. Tim wondered$_{M}$ how to solve$_{E}$ every problem Bill did $\Delta_{E}$.
d. Tim hoped\textsubscript{M} to solve\textsubscript{E} every problem Bill did $\Delta_{(\forall)M/E}$.

e. Tim planned\textsubscript{M} to solve\textsubscript{E} every problem Bill did $\Delta_{(\forall)M/E}$.

1.5.3.2 Licensing of polarity items

There are certain kinds of polarity items that ordinarily require a clause-local licensor. Such polarity items can hence be used to construct another kind of semantic test for the monoclausal approach to exhaustive control predicates. Romance negative indefinites such as Italian \textit{niente} ‘nothing’ fit the bill; Zanuttini (1991) in fact proposes that referential/independent tense acts as a barrier that disrupts the licensing relationship between the negative licensor and the negative quantifier. (See Giannakidou & Quer 1997 for similar observations regarding the licensing of negative indefinites in Greek and Catalan. Giannakidou & Quer are not concerned with syntactic restructuring effects, but they do establish that certain kinds of predicates and not others admit long-distance licensing of negative indefinites across a nonfinite clause boundary, which is exactly what we will see here for Italian as well. See also Progovac 1993b.) (81) establishes that Italian \textit{niente} ‘nothing’ is ungrammatical without a licensor such as \textit{non} ‘not’.

(81) Gianni *(\text{non}) gli ha dato \text{ni}ente.

‘Gianni didn’t give him anything.’

The contrast between (82) and (83) furthermore establishes that the link between the licensor \textit{non} and the polarity item \textit{niente} cannot involve a finite clause boundary: the baseline sentences in (82) are all grammatical, but the long-distance-licensed negative equivalents in (83) are ungrammatical.\footnote{17}{The predicate \textit{volere} ‘want’ is an exception to this generalization:}

(i) Gianni \textbf{non} vuole che Pietro gli dia \textit{niente}.

‘Gianni doesn’t want Pietro to give him anything.’

It is not surprising that \textit{volere} should be exceptional since \textit{want} and its crosslinguistic kin generally pattern in a mixed way with respect to the properties under investigation in this dissertation. In
(82)  a. Gianni ammette che Pietro gli abbia dato qualcosa.
    ‘Gianni admits that Pietro gave him something.’
b. Gianni confessa che Pietro gli ha dato qualcosa.
    ‘Gianni confesses that Pietro gave him something.’
c. Gianni rimpiange che Pietro gli abbia dato qualcosa.
    ‘Gianni regrets that Pietro gave him something.’
d. Gianni ha detto che Pietro gli ha dato qualcosa.
    ‘Gianni said that Pietro gave him something.’
e. Gianni ha sognato che Pietro gli ha dato qualcosa.
    ‘Gianni dreamed that Pietro gave him something.’

(83)  a. #Gianni non ammette che Pietro gli abbia dato niente.
    ‘Gianni doesn’t admit that Pietro gave him anything.’
b. #Gianni non confessa che Pietro gli ha dato niente.
    ‘Gianni doesn’t confess that Pietro gave him anything.’
c. #Gianni non rimpiange che Pietro gli abbia dato niente.
    ‘Gianni doesn’t regret that Pietro gave him anything.’
d. #Gianni non ha detto che Pietro gli ha dato niente.
    ‘Gianni didn’t say that Pietro gave him anything.’
e. #Gianni non ha sognato che Pietro gli ha dato niente.
    ‘Gianni didn’t dream that Pietro gave him anything.’

Turning to (84)–(86), we see that long-distance licensing across a nonfinite clause boundary is degraded as well. The baseline sentences in (84) are all grammatical. (85) establishes that the

chapter 3, I propose that when ‘want’ embeds an overt subject, it does so by concealing a silent argument introducer \( \emptyset_{\text{have}} \). Data like (i) establish that this argument introducer is not associated with its own clausal projection; it does not affect the monoclausality of the structure. See chapter 6 (section 6.7) for similar facts in Greek.

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embedding predicates are non-restructuring predicates; i.e., they do not license clitic climbing. (86) reinstates the clitic in its lower position to control for the ungrammaticality of restructuring, and shows that for these predicates, licensing across a nonfinite clause boundary is, while not as categorically unacceptable as with the finite clause boundaries, still degraded.

(84)  
  a. Gianni ammette di avergli dato qualcosa.
      ‘Gianni admits to having given him something.’
  b. Gianni confessa di avergli dato qualcosa.
      ‘Gianni confesses to having given him something.’
  c. Gianni detesta avergli dato qualcosa.
      ‘Gianni detests having given him something.’
  d. Gianni rimpiange di avergli dato qualcosa.
      ‘Gianni regrets having given him something.’
  e. Gianni afferma di avergli dato qualcosa.
      ‘Gianni affirms having given him something.’

(85)  
      ‘Gianni admits to having given him something.’
  b. *Gianni gli confessa di aver dato qualcosa.
      ‘Gianni confesses to having given him something.’
  c. *Gianni gli detesta aver dato qualcosa.
      ‘Gianni detests having given him something.’
  d. *Gianni gli rimpiange di aver dato qualcosa.
      ‘Gianni regrets having given him something.’
  e. *Gianni gli afferma di aver dato qualcosa.
      ‘Gianni affirms having given him something.’

(86)  
  a. ?Gianni non ammette di avergli dato niente.
‘Gianni doesn’t admit to having given him anything.’

b. Gianni non confessa di avergli dato niente.
   ‘Gianni doesn’t confess to having given him anything.’

c. *Gianni non detesta avergli dato niente.
   ‘Gianni doesn’t detest having given him anything.’

d. Gianni non rimpiange di avergli dato niente.
   ‘Gianni doesn’t regret having given him something.’

e. Gianni non afferma di avergli dato niente.
   ‘Gianni doesn’t affirm having given him something.’

Crucially, however, when we turn to restructuring predicates like potere ‘be able’, volere ‘want’ and riuscire ‘manage’, we see that such predicates do allow negative indefinite licensing across a nonfinite clause boundary, and also crucially, we see that this acceptability holds not only in the presence of overt restructuring effects such as clitic climbing, as in (87), but also in the absence of any overt restructuring effects, as in (88).

(87)  a. Gianni non gli può dare niente.
   ‘Gianni cannot give him anything.’

b. Gianni non gli vuole dare niente.
   ‘Gianni doesn’t want to give him anything.’

c. Gianni non gli è riuscito a dare niente.
   ‘Gianni didn’t manage to give him anything.’

(88)  a. Gianni non può dargli niente.
   ‘Gianni cannot give him anything.’

b. Gianni non vuole dargli niente.
   ‘Gianni doesn’t want to give him anything.’

c. Gianni non è riuscito a dargli niente.
‘Gianni didn’t manage to give him anything.’

We can explain all of these facts very simply by maintaining that negative indefinites like *niente* always require a clause-local licensor and that restructuring predicates — even in the absence of overt restructuring effects — always instantiate monoclausal structures. See also chapter 5 (section 5.5) and chapter 6 (section 6.4.1) for similar facts in Mandarin and Greek respectively.

1.5.4  *A note on Super-Equi*

“Super-Equi” is the term coined by Grinder (1970) to describe his observation that infinitival complements to predicates like *be difficult*, *be unnecessary*, and *be ridiculous* are under some conditions controlled by an argument of a higher predicate, as in the following examples:

\[(89)\]

a. Harry$_i$ thought that it would be difficult $\Delta_i$ to leave.

b. Maxine$_i$ decided that it would be unnecessary $\Delta_i$ to move.

c. Eric$_i$ insisted that it would be ridiculous $\Delta_i$ to call for help. (Grinder 1970:297)

In an updated treatment of this phenomenon, Landau (2001) shows that the choice of controller in this kind of structure is constrained by two factors. First, when the infinitive is “extraposed”, then if the infinitival-complement-taking predicate is a psychological predicate (i.e., if it entails something about a psychological state), then the controller must be an argument of the same predicate; Super-Equi is not allowed. In (90a), for example, *disturb* entails something about a psychological state, and so the controller of its infinitival argument must be the experiencer argument of *damage* rather than the subject of the higher predicate, as evidenced by the agreement morphology on the reflexive pronoun. In (90b), on the other hand, *damage* does not entail anything about a psychological state, and so the choice of controller for the infinitive is opened up to include the matrix subject, thus giving rise (optionally) to Super-Equi. The second factor has to do with the position of the infinitive: if the infinitive is “intraposed” as the subject of the relevant predicate, then the aforementioned asymmetry disappears: both psychological and non-psychological predicates
admit Super-Equi, as illustrated in (91).

\[(90)\]  
\[\text{a. Mary knew that it disturbed John to perjure himself/*herself.}\]  
\[\text{b. Mary knew that it damaged John to perjure himself/herself.}\]

\[(91)\]  
\[\text{a. Mary knew that perjuring himself/herself disturbed John.}\]  
\[\text{b. Mary knew that perjuring himself/herself damaged John.} \ (\text{Landau 2001:110})\]

For a theoretical account of this paradigm, see Landau 2001, and see also references therein for previous accounts of Super-Equi. For my purposes, what is important is Landau’s conclusion that Super-Equi — as exemplified in (90b), (91a), and (91b) — is a species of non-obligatory control: having an overt antecedent to the controlled position is optional, and when present, it need not be local. Indeed, as shown in (92), such constructions are grammatical in the absence of an antecedent for the controlled position. In recent theories, non-obligatory control has been alternatively analyzed by Landau (2001) as involving a logophoric anaphor in the sense of Reinhart & Reuland 1993 and by Hornstein (1999) as an instance of pro. On either analysis, this kind of phenomenon is separate from garden-variety complement control and is outside the purview of this dissertation.

\[(92)\]  
\[\text{a. It would be difficult to leave.}\]  
\[\text{b. It would be unnecessary to move.}\]  
\[\text{c. It would be ridiculous to call for help.}\]  
\[\text{d. It was disturbing to see him like that.}\]  
\[\text{e. It was damaging to see him like that.}\]

In the paradigm in (90)–(91), it is only (90a) — where Super-Equi is not allowed — that instantiates obligatory control, and so this is where it makes sense to apply the diagnostics for EC/PC status. (90a) differs from garden-variety subject control only in that here, the subject position is filled by an expletive and the controller is found as a lower argument of the predicate. And as it
turns out, the construction patterns with Partial Control with respect to all the relevant tests. First, Partial Control is possible. This is illustrated in (93) using the psychological predicates please and be painful.

(93)  
 a. Mary thought that it pleased John to gather at noon.  
 b. Mary that it was painful to John to have lunch together.

Second, overt embedded subjects are possible, either via finite complementation, as in (94), or via a for . . . to infinitive, as in (95).

(94)  
 a. Mary thought that it pleased John that everything turned out well.  
 b. Mary thought that it was painful to John that the venture failed.  
 c. Mary thought that it disturbed John that he perjured himself.

(95)  
 a. Mary thought that it pleased John for everyone to arrive on time.  
 b. Mary thought that it was painful to John for everyone to fail.  
 c. Mary thought that it disturbed John for everyone to fail.

Based on these diagnostics, it is also predicted that restructuring effects such as Romance clitic climbing should not be found with these predicates. These results converge on the view that this construction instantiates control in the standard sense of a biclausal structure with an embedded PRO subject, rather than a monoclausal raising structure.

1.6 Other approaches to the EC/PC-Restructuring link

1.6.1 Landau 2000

Recall from section 1.2.2 above that for Landau (2000), the availability of PC is tied to T-to-C movement. According to Landau, this means that there are two kinds of cases where EC is expected to obtain: first, it obtains when there is an embedded CP in which T-to-C movement has
not occurred, and second, it obtains when something smaller than a CP is embedded: if there is no T or C, then T-to-C movement is trivially ruled out. Consequently, for Landau, restructuring is a sufficient but not a necessary condition for EC. The prediction this account makes — in contrast to Cinque’s as presented above — is that we should be able to find non-restructuring contexts in which EC obtains. In support of this prediction, Landau presents three arguments based on the syntax of implicative verbs that EC can obtain without restructuring.

First, Landau argues that complements to implicative verbs are often introduced by overt complementizers in Romance (e.g., French oublier de ‘forget of’ and réussir à ‘manage to’). Landau reasons that because these verbs disallow PP complements, these complementizers cannot be analyzed as prepositions. In response to this argument, however, it is important to note that these putative complementizers surface even in the presence of overt restructuring effects. In the following Italian example, riuscire ‘manage/succeed’ co-occurs with clitic climbing and with the particle a ‘to’.

(96) …nessuno li riuscì a fermare…

‘…no one succeeded in stopping them…’ (Napoli 1981:863–864)

Therefore, unless one wants to defend the more dubious claim that an infinitive can be introduced by a complementizer even in the presence of overt restructuring effects, it seems reasonable to think that these particles are something other than complementizers. Furthermore, the opposition ‘complementizer’ vs. ‘preposition’ is a false dichotomy. As suggested by Cinque (2006:45), it could be that these apparent prepositions are functional heads that introduce small portions of the extended projection of VP. And in fact, these particles’ homophony with prepositions is not inconsistent with this idea: German zu ‘to’ is used as an infinitival marker even in restructuring configurations that Wurmbrand analyzes as VPs. (Cf. also English preposition and homophonous infinitival marker to, discussed in section 1.5.2.1 above.)

Second, Landau generalizes that “weak implicatives” (a term due to Pesetsky 1992 for implica-
tive verbs like in (97) that entail their complement only when used in the affirmative but not when negated) tend not to be restructuring predicates crosslinguistically. Crucially for Landau, such verbs nonetheless disallow PC (98).

(97) John forced/assisted/compelled/induced Mary to leave the room. (Landau 2000:77)

(98) a. *John forced the chair to gather without further due.
   b. *We thought that John compelled Mary to play together as a team. (Landau 2000:78)

For Landau, the fact that weak implicatives are EC but do not restructure indicates that there is no necessary connection between EC and restructuring. It may be important, however, that all of the predicates in (97)–(98) are cases of object-control. Although Landau’s account of the EC/PC split is intended to cover both subject- and object-control, the vast majority of the verbs Landau uses to exemplify the relevant verb classes are subject-control verbs. It is not clear, for example, how an object-control verb like urge would be classified — though it is certainly not implicative — and yet there is no difference in grammaticality between (98a) and (99).

(99) *John urged the chair to gather without further due.

This suggests that object-control verbs deserve their own separate study.18 Moreover, in Cinque’s (2006) judgment of the Italian equivalents of ‘strong’ and ‘weak’ implicative verbs, there is a split in the acceptability of PC. Strong implicatives like the restructuring verb riuscire ‘manage’, as in (100a), disallow PC, whereas weak implicatives like the non-restructuring verbs constringere ‘compel’ and forzare ‘force’, as in (100b), allow PC. This suggests that EC is indeed contingent on the restructuring status of the predicate, in support of Cinque’s proposal but against the expectations

18. Barrie (2004) makes the interesting suggestion that apparent cases of EC object-control are actually ECM constructions, and provides evidence from expletive subjects, passivization and idiom chunks using the verb order. It is not clear, however, that such an approach can extend to all of Landau’s EC object-control verbs. Consider e.g. I compelled him to take the medicine. vs. *I compelled the medicine to be taken by him.
of Landau’s account.

(100) a. *Loro dissero che Gianni non riuscì a incontrarsi alle 5.

   ‘They said that G. did not manage to meet at 5.’

b. Gianni constrinse/forzò Maria a incontrarsi alle 5.

   ‘G. compelled/forced M. to meet at 5.’ (Cinque 2006:60)

Another more intricate argument Landau makes in support of the claim that EC is not contingent on restructuring is based on evidence and argumentation from Wurmbrand 1998 regarding the interaction between restructuring and binding in German. Since Wurmbrand’s argument will be given a separate treatment in section 1.6.2 below, I will not discuss it here, other than to anticipate my conclusion there that the argument depends on assumptions that can be disputed.

In further support of his approach, Landau provides data from Spanish querer ‘want’, Italian preferire ‘prefer’, and German versuchen ‘try’, showing that for these verbs, just in case restructuring obtains, EC is required. Landau’s interpretation of this fact is that “the restructuring property is ‘superimposed’ on the basic EC/PC distinction, sometimes ‘reclassifying’ desiderative verbs under the EC category” (Landau 2000:81). However, Landau’s theory has nothing to say about why it is precisely the EC verbs that tend to restructure and the PC verbs that tend not to restructure, nor about where there are only a few attested cases of predicates that are PC in non-restructuring contexts and EC in restructuring contexts. This point can be brought out more clearly via table 1.2, which illustrates Landau’s theory of the relationship between EC/PC and restructuring. Because for Landau the two properties are independent, there are four logically possible kinds of configurations, given as (1)–(4) in this table. In most cases (configurations 1, 2, and 4), the restructuring status of a predicate has no effect on its status as EC or PC. Restructured PC verbs, however, are reclassified as EC, as in configuration 3. The worry, however, is that the vast majority of verbs fall into configurations 1 and 4: that is, they are either EC in Landau’s sense and are also restructuring, or they are PC in Landau’s sense and are non-restructuring. EC verbs that fail to restructure (con-
configuration 2) are limited to weak implicatives, and PC verbs that restructure (configuration 3) are limited to a handful of desiderative predicates.

<table>
<thead>
<tr>
<th>Original classification</th>
<th>Restructuring status</th>
<th>New classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EC</td>
<td>+</td>
<td>EC</td>
</tr>
<tr>
<td>2. EC</td>
<td>−</td>
<td>EC</td>
</tr>
<tr>
<td>3. PC</td>
<td>+</td>
<td>EC</td>
</tr>
<tr>
<td>4. PC</td>
<td>−</td>
<td>PC</td>
</tr>
</tbody>
</table>

Table 1.2: Theoretical relationship between EC/PC and restructuring in Landau 2000

What this suggests is that the best theory of the relationship between EC/PC and restructuring should take the patterning in configurations 1 and 4 as the central cases. Chapter 3, on the mixed status of *want*, and Chapter 6, on Greek, will shed light on why so few predicates fall into configuration 3 in Landau’s system.

1.6.2 Wurmbrand 2001

As far as I can tell, the observation that EC correlates with restructuring is original to Wurmbrand’s (1998) dissertation. In later work, however, Wurmbrand (2001) refines her claim to the position that restructuring is a sufficient but not a necessary condition for EC. Table 1.3 summarizes the relationship between EC/PC and (non-)restructuring as conceived by Cinque (2006) and Wurmbrand (2001), where ‘✓’ indicates that combination is possible and ‘∗’ indicates that the combination is not possible.

<table>
<thead>
<tr>
<th>Cinque 2006</th>
<th>Wurmbrand 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EC/restructuring</td>
<td>✓</td>
</tr>
<tr>
<td>2. EC/non-restructuring</td>
<td>∗</td>
</tr>
<tr>
<td>3. PC/restructuring</td>
<td>∗</td>
</tr>
<tr>
<td>4. PC/non-restructuring</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 1.3: Theoretical relationship between EC/PC and restructuring: Cinque vs. Wurmbrand

The only discrepancy in this table is in line 2; hence, we need to carefully examine Wurmbrand’s evidence for the claim that it is possible to have EC in a non-restructuring context.
Wurmbrand’s evidence comes from binding. The crucial minimal pair is in (101). (101a) instantiates an impersonal passive and (101b) instantiates a long passive. The two differ in grammaticality, and Wurmbrand ties this difference to constraints on the distribution of the reflexive anaphor *sich*. Wurmbrand provides the data in (102) as evidence that implicit arguments cannot bind *sich*. Thus, the split in grammaticality between (101a) and (101b) can be explained by saying that in (101a), the embedded infinitive contains a PRO subject which binds *sich* whereas in (101b), the infinitive, being a bare VP, contains no PRO. Consequently, *sich* has no antecedent and so the structure is ruled out. Insofar as *versuchen* ‘try’ is always an EC predicate regardless of the syntactic frame it appears in, Wurmbrand’s analysis thus entails that it is possible to have EC even in the presence of PRO.

(101) a. Es wurde versucht sich den Fisch mit Streifen vorzustellen.
   it was tried self the fish with stripes to.imagine
   ‘They tried to imagine what the fish would look like with stripes.’ (Wurmbrand 2001:231)

   b. *weil {sich} der Fisch {sich} vorzustellen versucht wurde.
      since self the fish self to.imagine tried was
      ‘since they tried to recall the image of the fish’ (Wurmbrand 2001:232)

(102) Ein Haus wurde (*sich) gekauft.
   a house was self bought
   ‘A house was bought (*oneself).’ (Wurmbrand 2001:232)

There are, however, two worries about Wurmbrand’s reasoning. The first worry has to do with the evidence in (102) that implicit arguments cannot bind *sich*. An important difference between the use of *sich* in (101b) and the use of *sich* in (102) is that in the former it is an obligatory reflexive dative argument of *vorstellen* ‘imagine’ whereas in (102), it is optional. Thus we need separate evidence that obligatory uses of *sich* also disallow implicit antecedents. But in fact, (103) is grammatical.

(103) Ein Haus wurde sich vorgestellt.
   a house was self imagined
‘A house was imagined.’

The grammaticality of (103) shows that obligatory reflexives can have implicit antecedents, which suggests that we do not need to posit a PRO in the embedded infinitive of (101) to explain its grammaticality and hence that the ungrammaticality of (101b) has to do with something other than the binding conditions for sich. This directly relates to the second worry: the long passive in German is a highly marked construction. (See Reis & Sternefeld 2004; Lee-Schoenfeld 2007 and references therein.) For example, Reis & Sternefeld (2004) note that “even seemingly acceptable examples of long passive can become bad by slight changes, for example, by adding another argument” (p. 485). They cite the example in (104).

(104) weil (*mir) der Wagen (*mir) zu reparieren versprochen wurde.
   since me.dat the car me.dat to fix promised was
   ‘since they promised (to me) that they would fix the car’ (Reis & Sternefeld 2004:485)

(104) differs from (101b) in that the extra argument is matrix-level rather than part of the embedded infinitive, but the larger point that long passives are made ungrammatical by minor changes suggests the need for caution in interpreting minimal pairs like (101).

Wurmbrand constructs a similar argument on the basis of ditransitive constructions. Important to this argument is the claim that dative DPs in German cannot bind reflexives. Wurmbrand presents the following data in support of this claim:

(105) weil der Hans_{h} der Maria_{m} sich_{h/*m} auf dem Foto zeigte
   since the.nom Hans the.dat Mary self_{h/*m} in the picture showed
   ‘since Hans showed Mary himself/*herself in the picture.’ (Wurmbrand 2001:233)

Against this backdrop, the crucial minimal pair is in (106). Wurmbrand reasons that (106a) is grammatical because sich is bound by PRO in the embedded infinitive; (106b), on the other hand, is ungrammatical, because the infinitive is just VP, thus containing no appropriate antecedent, and the relevant matrix argument is dative and thus not eligible as an antecedent. Again, similarly to the
previous case, insofar as *gelingen* ‘manage’ is always an EC predicate regardless of the syntactic frame it appears in, Wurmbrand’s analysis entails that it is possible to have EC even in the presence of PRO.

(106) a. Es ist dem Hans gelungen [sich dem Fisch mit Streifen vorzustellen].
    it is the.DAT Hans managed self the fish with stripes to.imagine
    ‘Hans managed to imagine what the fish would look like with stripes.’

    (Wurmbrand 1998:163)

b. *weil der Fisch dem Hans [sich mit Streifen vorzustellen] gelungen ist
    since the fish the Hans self with stripes to.imagine managed is
    ‘since Hans managed to imagine what the fish would look like with stripes’

    (Wurmbrand 2001:235)

But similar potential objections arise here. First, as noted by Reis & Sternefeld (2004), the claim that dative DPs in German cannot bind reflexives is not uncontroversial. Second, the marked status of long passives again means that there are other potential explanations for the ungrammaticality of (106b). Since the long passive is available for very few predicates, one important question is whether *gelingen* ‘manage’ allows long passivization at all. In this connection, it may be relevant that Wurmbrand accords question-mark status to long passivization with *gelingen*:

(107) ?weil mir der Brief auf Ahieb zu entziffern gelungen ist
    since me.DAT the.NOM letter straightaway to decipher managed is
    ‘since I managed straightaway to decipher the letter’ (Wurmbrand 2001:26)

Details aside, there are also more general aspects of Wurmbrand’s (2001) approach to restructuring in German that raise important challenges for Cinque’s (2006) view that restructuring is always functional and is obligatory for the predicates that trigger it, even in the absence of transparency effects. In particular, Wurmbrand makes a distinction between functional restructuring (which is obligatory for the verbs that trigger it) and lexical restructuring (which is optional for the verbs that trigger it) (see also Wurmbrand 2004). Wurmbrand furthermore makes a distinction
between restructuring (where the infinitive is a VP) and reduced non-restructuring (where the infinitive is a vP or TP). Whether the German facts can be fully reconciled with the Cinque-style view of restructuring is a matter for future research.

1.6.3 Barrie 2004

Barrie (2004) (see also Barrie & Pittman 2004) offers another take on the relationship between EC/PC and restructuring. Barrie’s analysis shares with Cinque 2006 the important idea that EC is not really control at all, but rather restructuring. In particular, Barrie adopts Wurmbrand’s (2001) view that restructuring is VP complementation, and hence that there is no subject position in the embedded material.

Having reduced all obligatory control to PC, Barrie then attempts to reconcile the PC effect with the movement theory of control by suggesting that movement to a θ-marked position results in a repair strategy of “chain splitting” as a way of satisfying the θ-criterion: the idea is that each chain individually satisfies the θ-criterion. Consequently, the controlled position “gets reinterpreted to satisfy LF requirements” (p. 11), and at this stage may acquire a semantic plurality feature.

Although Barrie’s proposal is not worked out in enough detail to be thoroughly evaluated, this paper is significant insofar as it constitutes one of the first instantiations of the insight that if EC is not really control, then we can simplify our theory of PC by having it be a general property of control. Although I will not pursue a movement approach to partial control in this dissertation, Barrie’s idea may remain an analytical option for reconciling the various correlates of the EC/PC split with a movement theory of control.

1.7 Conclusion and outlook

This chapter has two main conclusions. First, Landau’s (2000) EC/PC split correlates not only with semantic verb class and with the temporal properties of the infinitive (as emphasized by Landau) but also with the availability of finite complementation (in English) and with the availability of
overt embedded subjects and restructuring effects (crosslinguistically). Second, the theory that best makes sense of this full range of correlations is that suggested by Cinque (2006), whereby EC predicates realize functional heads in the inflectional layer of the clause and instantiate monoclausal raising structures, and PC predicates realize lexical verbs that embed full clausal complements with PRO subjects, as on the traditional view. A number of pressing questions remain for this view, and these will form the basis for the remaining chapters, as follows:

(108)  

a. How can a raising approach to EC be reconciled with the fact that EC predicates like *try* and *manage* pass all the standard tests for control? (Chapter 2)  
b. What determines whether a given predicate gives rise to EC or PC? (Chapter 2)  
c. Why does ‘want’ counterexemplify the correlation between EC and restructuring? (Chapter 3)  
d. What is the relationship between biclausality/monoclausality and infinitival tense? (Chapter 4)  
e. To what extent is the proposal crosslinguistically valid? (Chapters 5 and 6)
2.1 Introduction

In this chapter, I take as a starting point the core proposal from the previous chapter and investigate two questions that arise as a result. Hence I will begin by briefly recapping the core proposal and the motivation behind it. Landau (2000) identifies two classes of control predicates that differ in their ability to support partial control: E(xhaustive) C(ontrol) predicates require a relation of absolute identity between the controller the controllee, whereas P(artial) C(ontrol) predicates, given a contextually salient plurality, admit a proper subset relation between the controller and the controllee. In (1)–(2), the matrix material *Mary said that . . . makes a plurality salient (namely Mary and the entity named by the subject of the embedded clause *John), and the adverb together in the embedded clause forces a partial control interpretation. EC predicates can be further divided into implicative, aspectual, and modal predicates (1), and PC predicates can be further divided into factive, propositional, desiderative, and interrogative predicates (2).

(1) a. *Mary said that John managed to eat lunch together. ** IMPLICATIVE
    b. *Mary said that John began to eat lunch together. ** ASPECTUAL
    c. *Mary said that John had to eat lunch together. ** MODAL

(2) a. Mary said that John hated to eat lunch together. ** FACTIVE
    b. Mary said that John claimed to have eaten lunch together. ** PROPOSITIONAL
    c. Mary said that John hoped to eat lunch together. ** DESIDERATIVE
    d. Mary said that John wondered whether to eat lunch together. ** INTERROGATIVE

Cinque (2006), following Wurmbrand’s (1998) observation that EC predicates tend crosslinguistically to be restructuring predicates, suggests that EC predicates are actually functional heads
in the inflectional layer of the clause and hence instantiate monoclausal raising structure (3a) rather than biclausal control structures (3b).

(3)  

a. John began \[vP \text{John to eat lunch}\]. ← EC = vP-complementation w/subject raising  

b. John$_1$ hoped \[CP \text{PRO$_1$(+) to eat lunch}\]. ← PC = CP-complementation w/PRO  

This view has important advantages. Conceptually, it has the simplifying consequence that all true control predicates are PC predicates. Thus the partial control phenomenon reduces to a fully general property of PRO and so-called ‘exhaustive control’ follows from the fact that the ‘controller’ and ‘controllee’ constitute members of an A-chain. On the empirical side, this view makes sense of a number of correlates of the EC/PC split, including the distribution of restructuring, finite complementation, and overt embedded subjects.

However, the functional restructuring approach to exhaustive control also raises a number of important questions. In this chapter, I address the following two:

(4)  

a. How is it possible to maintain a raising analysis for EC predicates like manage which unambiguously entail something about their subject?  

b. Why do certain semantic classes of predicates (implicative, aspectual and modal) behave one way (i.e., get realized as functional heads in the inflectional layer of the clause) whereas other classes (factive, propositional, desiderative, and interrogative) behave another way (i.e., get realized as lexical verbs that take full clausal complements)? What is the reason for this pattern?  

The first of these two questions is admittedly theory-internal in the sense that it arises only under the particular view of restructuring/EC that I am advocating here. (The question does, of course, arise in a more general fashion for proponents of the Movement Theory of Control, who seek to reduce all cases of obligatory control to movement: their solution to the question will be reviewed and ultimately rejected below.) Cinque (2006:25–29), in addressing the fact that some
Restructuring verbs appear to be able to impose selectional restrictions on their subject, provides arguments based on the distribution of Italian partitive clitic *ne* and impersonal pronoun *si* that such verbs are syntactically raising. (See section 2.2.1 for details.) As for the selectional restrictions, Cinque suggests that “A possible solution the paradox...would consist in taking their selectional requirements to be a consequence of their semantics” (p. 29). However, it is not obvious how such a semantic requirement could be imposed within the context of a raising structure. This chapter will propose a concrete solution to this “paradox”.

The second question, on the other hand, has a theoretical significance that is independent of the specific concerns raised by the functional restructuring approach to Exhaustive Control. A central question in the restructuring literature is why only certain kinds of predicates tend crosslinguistically to restructure. Rizzi (1978) generalized that the ‘core’ restructuring predicates in Italian include modal verbs, aspectual verbs, and motion verbs, and it is now well established that this is a crosslinguistically robust fact. It is also well established that certain kinds of predicates (notably, propositional and factive predicates) tend not to restructure, while certain other kinds of predicates (notably, *try* and implicative verbs) exhibit variation in this respect. In this chapter, I will take the strong crosslinguistic stability as central. I believe that the core proposal from the previous chapter puts us in a unique position to shed new light on why only certain kinds of predicates tend to restructure. The reason is that Cinque’s (2006) approach to restructuring provides an explicit framework for relating the semantics of a predicate to its syntax. And this is exactly what the question boils down to: how does the semantics of a predicate relate to its syntax? For Cinque, the answer is that when a predicate has a *semantics* that matches that of an inflectional-layer functional head, its *syntax* will reflect this because the predicate will be base-generated in that functional position. The naive expectation, then, is that whenever a verb matches the meaning of an inflectional-layer functional head, it will restructure. As we will see below, this view is not quite right, but for a principled reason.
In summary, my answers to the questions will run as follows. As for the first question: although *try, manage*, etc. come out of the lexicon as lexical verbs that take external arguments, a restructuring rule allows them to be directly inserted into particular functional positions in the inflectional layer of the clause because they have the right semantics. The restructuring rule furthermore licenses a conversion of their external argument into an incorporated silent reflexive pronoun: in semantic terms, a *dependent variable* in the sense of Giannakidou 1998. When the surface subject raises, it is an appropriate structural position to obligatorily bind this variable. The restructuring verb consequently has semantic access to the subject, thus simulating control in a syntactically raising structure.

The answer to the second question builds directly off the answer to the first. I begin with a descriptive generalization relating the availability of EC/restructuring to the structure of IP: roughly, EC/restructuring predicates all have meanings that correspond to heads *below* Tense in Cinque’s hierarchy, whereas PC/non-restructuring predicates have meanings that correspond to heads *above* Tense in Cinque’s hierarchy. The reason verbs that correspond to $>\text{Tense}$ heads cannot restructure is because when they do, they are left with an incorporated reflexive pronoun which — because it is above $[\text{Spec,TP}]$, the highest position where the subject can be interpreted — is too high in the structure to be bound. Because it is reflexive and hence cannot receive a value from the context, the structure is ruled out. Consequently, such verbs must be realized as main lexical verbs that take full clausal complements.

The organization of the rest of the chapter is as follows. Section 2 reviews the syntactic evidence for the raising status of EC/restructuring predicates and the semantic evidence for their control status. Section 3 resolves this tension by arguing that a raising analysis can be maintained for predicates that entail something about their surface subject. Two ingredients are important. First is the idea that modal expressions are keyed to aspects of meaning which can be modeled as a variable on the modal that must be valued (Hacquard, 2010). Second is the idea that some variables in natural language — including reflexive pronouns, traces, and NPIs — are *dependent* in the sense
of Giannakidou 1998: they cannot receive their value from the context. When a raising predicate has a dependent variable as part of its meaning, then when the subject raises to its surface position, it is in an appropriate structural position to obligatorily bind this variable, this simulating control in a syntactically raising structure. Section 4 shows how this approach sheds new light on the question of why only some predicates restructure. I present a novel descriptive generalization that predicates with meanings corresponding to heads below Tense in Cinque’s IP restructure whereas predicates with meanings corresponding to heads above Tense in Cinque’s IP do not. This is because, I argue, restructuring above Tense leads to an unbound dependent variable and hence ungrammaticality. Finally, section 5 concludes.

2.2 Reviewing the evidence

In this section, I review the key facts regarding the predicates in (5), which in the previous section I analyzed as involving a monoclausal raising syntax. (Although for the purpose of illustration I will focus on these five predicates, they are members of a larger class that more or less share the same properties we will be reviewing. Also, my inclusion of want in this group anticipates the conclusions from chapter 3.)

(5)  a. John tried [to get an A].
    b. John managed [to get an A].
    c. John wanted [to get an A].
    d. John had [to get an A].
    e. John started [to get an A].

Section 2.2.1 presents the evidence for a raising analysis for these predicates, first reviewing the reasoning from the previous chapter and then also including two additional arguments from Cinque 2006. Following this, section 2.2.2 reviews some of the standard tests for control, which indicate that some of the predicates are subject-oriented: they unambiguously entail something about their
surface subjects. The conclusion will be that we need to dissociate the semantic phenomenon of subject orientation from the syntactic mechanism of control. This task is taken up in section 2.3.

2.2.1 Evidence for raising

Here I present five arguments in favor of a raising analysis of the relevant predicates. The first three arguments are reviewed from the previous chapter, and the last two are from Cinque 2006, based on the distribution of ne-extraction and impersonal si in Italian. For the first three arguments, it is important to keep in mind that none of them pose ‘problems’ for standard theories of control, in the sense that standard theories of control are all equipped to deal with the familiar issue I raise. Rather, these are arguments based on simplicity: in each case, I claim, a simpler theory of control can be had by severing this particular class of predicates from the control class.

The first piece of evidence comes from restructuring. All of the predicates in (6) correspond to restructuring predicates in languages that have overt restructuring effects. Although restructuring is difficult to detect in English, I suggested in the previous chapter that the failure of these predicates to license finite complements, as in (7), could be taken as evidence for their restructuring status.

(6) a. John tried [to get an A].
    b. John managed [to get an A].
    c. John wanted [to get an A].
    d. John had [to get an A].
    e. John started [to get an A].

(7) a. *John tried [that he would get an A].
    b. *John managed [that he got an A].
    c. *John wanted [that he would get an A].
    d. *John had [that he would get an A].
    e. *John started [that he got an A].
If we follow Cinque’s (2006) view that restructuring verbs realize functional heads in the inflectional layer of the clause, and the standard assumption that inflectional heads cannot introduce arguments, then it follows that these predicates must be raising predicates.

The second piece of evidence is from exhaustive control. With the important exception of want (which I will return to in chapter 3), all of the predicates under discussion fail to license partial control; i.e., they are exhaustive control predicates.

(8)  
  a. *John tried [to gather at noon].
  b. *John managed [to gather at noon].
  c. John wanted [to gather at noon].
  d. *John had [to gather at noon].
  e. *John started [to gather at noon].

If these are raising predicates, then their exhaustive control status follows, and by the same token, partial control becomes a fully general property of PRO.

The third piece of evidence is from the distribution of overt embedded subjects. Again excepting want, all of the predicates under discussion fail to license overt embedded subjects either via ECM or via a for . . . to infinitive.

(9)  
  a. *John tried (for) Bill [to get an A].
  b. *John managed (for) Bill [to get an A].
  c. John wanted (for) Bill [to get an A].
  d. *John had (for) Bill [to get an A].
  e. *John started (for) Bill [to get an A].

If the predicates in (9) are raising predicates, then the ungrammaticality of embedded subjects trivially follows: there can only be as many arguments as are introduced by the infinitive.

I now turn to Cinque’s two arguments in favor of a raising analysis for the Italian equivalents
of these predicates. The first argument comes from *ne*-extraction. A well-known fact about Italian partitive clitic *ne* is that it can only be extracted from objects of transitive verbs or from subjects of unaccusative verbs. Cinque (2006) notes — following an earlier observation by Burzio (1986) — that in the context of a restructuring predicate like *volere* ‘want’, extraction of the partitive clitic *ne* from an inverted subject is possible just in case the infinitive is unaccusative. Thus (10a) is grammatical, as is (10b), since *intervenere* ‘intervene’ is unaccusative, but (10c) is ungrammatical, since *mangiare* ‘eat’ is unergative.

(10) 

a. Ne vorrebbero intervenire molti.  
‘Many would like to intervene.’

b. Vorrebbero intervenire *ne* molti.  
‘Many would like to intervene.’

c. *Ce ne* vorranno mangiare ben pochi.  
Intended: ‘Very few of them will want to eat.’ (Cinque 2006:26–27)

As Cinque points out, these facts afford a simple analysis: the so-called inverted subject is actually in its base position as the direct object of the unaccusative verb. But this only makes sense if *volere* ‘want’ is a raising predicate. That is, *volere* does not introduce its own subject, and so it is transparent to the unaccusativity/unergativity of its complement verb for the purpose of *ne*-extraction.

Cinque’s second argument comes from the distribution of impersonal *si*. Cinque establishes that when *si* is found on an infinitive embedded under a raising verb, it is grammatical only when the infinitive assigns an external theta role. Thus it is grammatical in (11a), because *trovare* ‘find’ assigns an external theta role, but not in (11b), because *arrivare* ‘arrive’ does not. With this generalization in place, Cinque then shows that this phenomenon is transparent to an intervening *volere* ‘want’. Thus (12a) is (mostly) acceptable because *dare credito* ‘give credit’ assigns an external theta role but (12b) is ungrammatical because *venire in aiuto* ‘come in help’ does not.

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(11)  a. Sembra essersi finalmente trovato il colpevole.
   ‘One seems to have found the culprit.’
   b. *Sembra essersi arrivati troppo tardi.
   ‘One seems to have arrived too late.’

(12)  a. (?)Non sembra essergli si voluto dare sufficiente credito.
   ‘One does not seem to want to give him enough credit.’
   b. *Non sembra essergli si voluto/i venire in aiuto.
   Intended: ‘One does not seem to want to come to him in support.’ (Cinque 2006:27–28)

As Cinque points out, these facts suggest that volere does not assign an external theta role of its own: if it did, then we would expect (12a–b) to be uniformly grammatical. If volere is a raising verb, on the other hand, then it follows that the acceptability of si will turn on the argument structure of the infinitive that it embeds.

2.2.2 Evidence for control

Having reviewed the arguments for treating the relevant class of predicates as raising predicates, I now review the evidence for treating (some of) them as control predicates. Standard tests for control include the unacceptability of pleonastic subjects, the unacceptability of idiom chunks, and non-synonymy under passivization. (See e.g. Davies & Dubinsky 2004.) According to these tests, the predicates in (a–c) are control predicates whereas the predicates in (d–e) are raising predicates.

(13)  **PLEONASTIC SUBJECT:** weather it

   a. *It tried to rain.
   b. *It managed to rain.
   c. *It wanted to rain.
   d. It had to rain.
   e. It started to rain.
(14) **PLEONASTIC SUBJECT: non-weather *it*

a. *It tried to be obvious that something happened.
b. *It managed to be obvious that something happened.
c. *It wanted to be obvious that something happened.
d. It had to be obvious that something happened.
e. It started to be obvious that something happened.

(15) **PLEONASTIC SUBJECT: *there***

a. *There tried to be a problem.
b. *There managed to be a problem.
c. *There wanted to be a problem.
d. There had to be a problem.
e. There started to be a problem.

(16) **IDIOM CHUNKS***

a. *The shit tried to hit the fan.
b. *The shit managed to hit the fan.
c. *The shit wanted to hit the fan.
d. The shit had to hit the fan.
e. The shit started to hit the fan.

(17) **SYNONMY UNDER PASSIVIZATION***

a. The doctor tried to examine the patient. ≠ The patient tried to be examined by the doctor.
b. The doctor managed to examine the patient. ≠ The patient managed to be examined by the doctor.
c. The doctor wanted to examine the patient. ≠ The patient wanted to be examined by
the doctor.
d. The doctor had to examine the patient. = (?) The patient had to be examined by the
doctor.
e. The doctor started to examine the patient. = The patient started to be examined by the
doctor.

What all three of these tests have in common is that they establish that try, manage and want obligatorily entail something about their surface subject whereas have and start do not. Thus pleonastic subjects are ruled out because they are semantically vacuous and hence resist entailments. Idiom chunks are ruled out because the subject portion of the idiom chunk is singled out for an entailment that conflicts with its non-compositional status as part of the idiom. Finally, synonymy under passivization fails because passivization affects which argument is in subject position and hence which argument is singled out by the predicate for entailment. To be neutral about their proper syntactic analysis, we will say that what these tests show is that try, manage, and want are subject-oriented: they entail something about their subject.

2.2.3 Putative structural raising/control contrasts

Landau (to appear) assembles eight putative structural contrasts that uphold the traditional raising/control distinction. But of these eight contrasts, one is based on assumptions explicitly challenged in chapter 1 (CP vs. TP complementation), one faces counterexamples that undermine its usefulness (‘raising’ predicates as unaccusative: see Cinque’s data from Italian partitive clitic ne and impersonal si above for counterexamples), two apply to object control/raising only (subextraction and tough-movement), and one involves theoretical choices that have been the subject of ongoing debate (case preservation/independence: see Sigurdsson 1991; Landau 2003, 2006; Boeckx & Hornstein 2006a; Sigurdsson 2008; Landau 2008b; Bobaljik & Landau 2009; Boeckx et al. 2010b; van Urk 2010; Wood 2012). This leaves three remaining contrasts. The first is illustrated in (18)–(19) based on an observation by Jacobson (1992): control predicates tend to admit complement
drop (18) whereas raising predicates do not (19):

(18)  John tried/forgot/refused to take out the garbage, and I think that Bill also tried/forgot/refused.

(19)  *John seems/happens/turns out to be obnoxious, but I don’t think that Sam seems/happens/turns out.  

(Landau to appear:26)

However, this generalization faces counterexamples that warrant an alternative way of stating the generalization: eventive complements (i.e., complements to aspectual verbs, implicative verbs, and try) can be dropped but propositional complements cannot. This would explain the grammaticality of complement drop in (20) despite the absence of subject orientation as well as the ungrammaticality of complement drop in (21) despite the presence of subject orientation (taking want and regret as relations between individuals and propositions).

(20)  The boulder started to roll down the hill and then the rocks started as well.

(21)  a.  *John wants to go see a movie and Bill wants as well.

b.  *John regretted moving away and Bill regretted too.

The second contrast is illustrated in (22), based on an observation by Burzio (1981) and cited by Chomsky (1981): association of each with a lower DP (the visiting diplomats) is possible across a raising predicate (22a) but not across a control predicate (22b).

(22)  a.  One interpreter each seemed to have been assigned to the visiting diplomats.

b.  *One interpreter each tried to be assigned to the visiting diplomats.

(Chomsky 1981:61)

I hypothesize that what is responsible for this contrast is the binding relation which (as I will propose below) holds between the matrix subject and subject-oriented predicates like try. This is supported
by the fact that if the raising example is augmented to include an experiencer argument bound by
the matrix subject, it patterns with the control example in being ungrammatical, as we see in (23).

(23) *One interpreter each seemed to himself to have been assigned to the visiting diplomats.

The final remaining contrast is based on data from European Portuguese and involves the ob-
servation that raising but not control predicates allow the lower subject position to be spelled out
as a lexical DP (Barbosa, 2009; Szabolcsi, 2009). Although a full assessment of the Portuguese
facts are beyond the scope of this investigation, the possible existence of ‘backward subject raising’
in Adyghe (see Polinsky & Potsdam 2006:179–181) suggests that this contrast may be specific to
properties of Portuguese.

2.3 Dissociating subject-orientation from control

In the previous section, we saw a number of reasons for thinking that the predicates in (24) instan-
tiate (monoclausal) raising structures. We also saw, however, that the predicates in (24a–c) are
subject-oriented in the sense that they unambiguously entail something about their surface subject.
On the standard view, this subject-orientation is captured through the syntactic mechanism of con-
trol. How can we resolve this tension? Or in other words, how can we dissociate subject-orientation
from control?

(24) a. John tried [to get an A].
   b. John managed [to get an A].
   c. John wanted [to get an A].
   d. John had [to get an A].
   e. John started [to get an A].

In this section, I will argue that the key to dissociating subject-orientation from control emerges
straightforwardly from the combination of two previously unconnected ideas from the literature.
The first is the idea that modal expressions are keyed to aspects of meaning that can be modeled as binding relations that take place within the clause (Hacquard, 2010). The second is the idea that variables in natural language come in two isotypes: dependent and nondependent (Giannakidou, 1998) where dependent variables are those that cannot get their value from the context, such as NPIs, reflexive pronouns, and traces. I discuss these two ideas in turn in sections 2.3.2 and 2.3.3 respectively before bringing them together in section 2.3.4, formalizing the analysis in section 2.3.5, and providing independent evidence for the analysis in section 2.3.6. First, however, I turn to a discussion of an alternative possibility adopted by proponents of the Movement Theory of Control.

2.3.1 On (not) abandoning the $\theta$-Criterion

One approach we might take in reconciling the EC predicates’ syntactic raising-like properties with their semantic control-like properties would be to adopt one of the key theoretical moves of the Movement Theory of Control and abandon the $\theta$-Criterion — which requires a one-to-one mapping between A-chains and $\theta$-roles (see e.g. Chomsky 1981:360) — in favor of the view that a single A-chain can be associated with more than one $\theta$-role (Hornstein, 1999, 2001, 2003; Boeckx & Hornstein, 2003, 2004, 2006a,b, 2008; Boeckx et al., 2010a,b; Hornstein & Polinsky, 2010). But such a move raises some important questions about the syntax-semantics interface that come into focus when we think about how the Movement Theory of Control would be implemented in a compositional type-driven semantics like that laid out in Heim & Kratzer 1998. In order to account for the interpretive effects of relative clause formation and quantifier raising Heim & Kratzer (1998) propose an interpretive rule of Predicate Abstraction, which I will here — for the sake of consistency with choices made later in this chapter and in chapter 3 — present in Büring’s (2004) version, although nothing crucial hinges on this reformulation. What this rule says is that whenever a DP moves, it is integrated back into the structure by determining how the assignment function will interpret its trace.
(25) a. trace binding (obligatory):

\[
\text{DP}_n \xrightarrow{\mu_n} \text{XP} \xrightarrow{\Rightarrow} \text{LF} \xrightarrow{\mu} \text{DP} \xrightarrow{\Rightarrow} \text{XP}
\]

where \( n \) is a movement index

b. \[ [[\mu_n \text{XP}]]^{w,g} = \lambda x. [[\text{XP}]]^{w,g[t_n \rightarrow x]} \]

(Büring 2004:25)

(25) makes the right semantic predictions for all standard cases of DP movement including both A-bar movement (\( wh \)-movement) and A-movement (e.g., passivization and raising in the traditional sense) and it essentially derives the effect of the \( \theta \)-Criterion by having the consequence that a single argument can only saturate one position. But such a system cannot straightforwardly accommodate the Movement Theory of Control. To see this, let’s adopt a ‘toy semantics’ that assigns semantic types as in (26), where \( \langle e \rangle \) is the type of individuals, \( \langle st \rangle \) is the type of propositions (a function from worlds \( \langle s \rangle \) to truth values \( \langle t \rangle \)), and \( \langle \tau \rangle \) is a variable over types. The classic interpretive differences between raising and control structures are cashed out here in terms of whether the predicate has an individual argument in addition to its propositional argument (like \( \text{try} \) (26c)) or has a propositional argument only (like \( \text{seem} \) in (26d)). (The type of \( \text{try} \) is simplified here in a way that does not affect the argumentation: see Sharvit 2003; Grano 2011, and chapter 3 section 3.5.3.2 for more on the semantics of \( \text{try} \), where we will see that \( \text{try} \) has an eventive rather than a propositional argument.)

(26) a. \( \text{John} \rightarrow \langle e \rangle \)

b. \( \text{run} \rightarrow \langle e, st \rangle \)

c. \( \text{try} \rightarrow \langle st, \langle e, st \rangle \rangle \)

d. \( \text{seem} \rightarrow \langle st, st \rangle \)

e. \( \mu \rightarrow \langle \tau, \langle e, \tau \rangle \rangle \)

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With these assumptions in place, node-by-node composition correctly yields a propositional meaning for a raising sentence (27), but incorrectly yields a proposition with a leftover individual argument for a control sentence analyzed as in the Movement Theory of Control (28):

\[(27) \quad \langle \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle\]

\[(28) \quad \langle e, \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle \quad \langle \text{st} \rangle \quad \langle e, \text{st} \rangle \quad \langle e, \langle e, \text{st} \rangle \rangle\]

Of course, we could make alternative assumptions about how the semantics of movement works so that movement sometimes results in $\mu$-insertion and sometimes works in a way analogous to an antecedent-anaphora relation whereby the antecedent supplies the meaning of not just one but two positions in the structure. (The antecedent-anaphora relation will in fact play an important role in my own proposal detailed below, although it will be tied to properties of individual lexical items like *try* rather than being a general option for interpreting movement structures.) But in the absence of a theory of what regulates the choice between these two options, such an approach runs the risk of overgeneration: we do not want to allow a sentence like *John admires*, as in (29), to be grammatical with the meaning *John admires himself*, derived via A-movement of *John* from object to subject position and interpreted as an antecedent-anaphora relation. (There is a famous class of ‘naturally reflexive’ verbs like *shave* which behave in exactly the way predicted by such an analysis, but importantly, this is limited to a particular class of lexical items: see Kemmer 1993.)

\[(29) \quad *\text{John}_1 \text{ admires } \text{t}_1.\]

An alternative position would be to try to account for the ungrammaticality of (29) as a syntactic violation. This is in fact the tack taken by researchers who advocate a movement analysis of re-
flexivization (Hornstein, 2001, 2007; Boeckx et al., 2007): Hornstein (2001) argues that -self is inserted to check Case so that A-movement can proceed; since -self is an affix, the pronoun him comes in as a “do-support”-like last resort strategy to host it. Although I will not attempt here a thorough evaluation of the movement approach to reflexivization, I will simply point out that the Case violation analysis of (29) seems to depend crucially on two faulty assumptions. The first is the assumption that a Case-assigner (in this instance, little-v) must always assign Case. But this assumption is falsified by the example of unergative verbs, where Case is ordinarily not assigned to any direct object (30a) but is in the presence of a resultative predicate (30b). (This point and the example in (30) comes from Grano & Kennedy 2012, note 29.)

(30) a. John ran.
   b. John ran the pavement thin.

The other assumption is that a DP can only be assigned Case by one Case assigner (or an assumption with partially overlapping consequences, that once a DP is assigned Case it is ineligible for further A-movement). But given the evidence for multiply case-marked A-chains — whereby a DP is assigned Case in one position and then again after A-movement in a subsequence stage of the derivation (Ura, 1996; Bejar & Massam, 1999; Merchant, 2006; Alexiadou et al., 2010) — this assumption is not valid either.

In light of these considerations, my ambition in what follows is to show that we can capture the interpretive properties of predicates like try without giving up on a raising analysis and also without giving up on uniformity in the semantics of movement. I will then show that the new approach has some independently desirable properties.
2.3.2 Modals and individual relativity

The first idea from the literature that I will make use of in my account is that modal expressions are keyed to an individual (Bybee et al. 1994; Hacquard 2010).\(^1\) Take, for example, English have on its obligation reading. Intuitively, have expresses a relationship between an individual and a state of affairs: the individual has an obligation to bring about the state of affairs. Oftentimes, it so happens that the obligation-bearing individual is syntactically in subject position. The most natural interpretation of (31), for example, is that John has a particular obligation, namely to consult Bill on every decision.

(31) John has to consult Bill on every decision.

Consequently, some scholars have proposed that ‘root’ modals (i.e., non-epistemic modals) are syntactically control predicates: this has the semantic consequence that such modals entail something about their subject, which, in light of data like (31), seems like a desirable result. (See e.g. Ross 1969; Perlmutter 1970; Jackendoff 1972; Brennan 1993.) But it turns out that this is misguided (Bhatt, 1998; Hackl, 1998; Wurmbrand, 1999). As demonstrated by the following data due to Bhatt (1998), the obligation-bearer associated with have need not be in subject position. It can be elsewhere in the sentence, such as in the by-phrase in (32a), or it can be absent from the sentence entirely and recoverable only from context, as in (32b–c).

(32) a. Bill has to be consulted by John on every decision. (\textit{John} being the bearer of obligation)

---

1. Hacquard (2010) refers to this individual as an ‘anchor’ and to the phenomenon as ‘anchoring’. Here I will refrain from using this term to avoid confusion with an older and partially overlapping concept that has been given the same term in the literature: Farkas (1985a, 1992); Giannakidou (1999) (building on earlier insights by Morgan 1973; McCawley 1981) use the term ‘individual anchor’ to refer to the individual against which the truth or falsity of a proposition is evaluated. This concept is more general than Hacquard’s in that, in the case of an unembedded assertion that may lack any explicit modal marking, it picks out the speaker of the utterance, but it is also more narrow than Hacquard’s in that it is always epistemic. As we will see presently, non-epistemic modals are keyed to an individual in a non-epistemic way.
b. We are expecting fifty guests tonight. There have to be 50 chairs in the living room by 5 p.m. (as said to the party organizers)

c. John has to eat an apple today. (as said as an instruction to John’s caretaker at the day-care) (Bhatt 1998:7)

In order to model this behavior of *have*, we can say that *have* contains as part of its meaning an individual argument which it treats semantically as **obligation bearer**. Thus, the syntax for the sentence in (31) is as in (33). As we see here, *have* acts as a modal in a monoclusal raising structure. It furthermore contains a variable as part of its meaning which must be valued by some contextually salient individual. For structural reasons, the syntactic subject makes for a particularly salient individual, and so oftentimes the subject will supply the requisite value, but as we saw from the data in (32), this need not always be the case.²

(33)

```
(33) TP
    DP
    |    T
    |    T'
    |    ModP
    |    Mod
    |    have(x)
    |   vP
   John to consult Bill on every decision
```

Before moving on, a few words are in order on the relationship between the proposal instantiated by (33) and some previous ideas in the literature. According to Hacquard (2010), the choice of

² This idea has its roots in a suggestion by Hacquard (2006:130). Following an idea credited to Dominique Sportiche, Hacquard suggests that a uniform raising analysis of modals can be had via the proposal that root modals contain a zero pronoun that acts as an individual argument and that is obligatorily bound by the subject when the subject raises for EPP reasons. Although we have now seen that the individual argument in a root modal need not be a subject, the case will be different for subject-oriented predicates, as discussed in more detail below.
a modal’s individual argument is quite restricted: she generalizes that epistemic modals are keyed to the ‘local knowledge bearer’ (which in matrix contexts is usually the speaker; see section 2.4.4.1 for more on speaker orientation) and circumstantial modals are keyed to some participant in the VP event. (See also Kratzer 2011, who proposes that circumstantial modal can takes a ‘designated argument’ that must come from somewhere in its complement.) In light of data like (32b–c), where a deontic modal takes the addressee as its individual argument, Hacquard points to literature suggesting that deontics can be keyed either to the subject (or some other VP participant) or to the addressee. Thus, Hacquard concludes, we can still maintain the generalization that a modal’s individual argument comes either from the ‘speech event’ (the speaker for epistemics and the addressee for some deontics) or the ‘VP event’ (for circumstantial modals in general). In contrast, by proposing the structure in (33), I am entertaining the idea that for at least some modals, the individual argument can be valued by any contextually salient individual. As preliminary evidence for this more unrestricted view of the individual argument, consider the discourse fragment in (34), as spoken by one party host to another. In the second sentence, there is a reading in which the understood obligation-bearer is the party organizer, as made discourse-salient by the previous sentence.

(34) The party organizer will be here at 2pm. Remember that there have to be 50 chairs in the living room by 5pm.

This suggests that deontic have can take an individual argument which is neither a participant in the VP event nor a participant in the speech event.

2.3.3 Dependent vs. Nondependent variables

In the previous subsection, I proposed to model the individual argument of a modal as a variable that may be filled by any contextually salient individual. However, we also know that certain linguistic phenomena have been analyzed as involving variables with a more restricted interpretation — variables that cannot receive their value from the context but rather must be valued by another
expression in an appropriate structural relationship with it. Following Giannakidou (1998, 2001), I will call this kind of variable **dependent**; variables of this type include traces and reflexive pronouns. As schematized in (35), the trace in (35a) is obligatorily bound by *who* and the reflexive pronoun *himself* in (35b) is obligatorily bound by the subject.

(35)  
\[ \text{a. Who}_1 \text{ did John see } t_{1/2}^*/2? \]  
\[ \text{b. John}_1 \text{ saw himself}_{1/2}. \]

Another class of variables that cannot receive their value from the context (and the class for which Giannakidou coined the term ‘dependent variable’) is the NPI class in an approach like that found in Giannakidou 1998. Rather than getting valued by an antecedent the way traces and reflexives do, however, NPIs must be bound in the scope of a nonveridical operator. See also Giannakidou 2009 for an account of subjunctive mood in terms of a dependent temporal variable, and see also the discussion of ‘non-deictic variables’ in Giannakidou 2011.

2.3.4 *From dependency to subject orientation*

In the previous two subsections, we have seen that (a) certain kinds of inflectional heads contain as part of their meaning an individual variable and (b) some variables in natural language are dependent: they cannot get their value from the context but rather must be bound by an antecedent in a structurally appropriate position. Putting these two ideas together leads us to the expectation that we might find some inflectional heads that contain dependent variables. This, I claim, is exactly what we find in the case of subject-oriented restructuring predicates like *try, manage* and *want*. Let’s take *try* as an example and compare it with *have*. The sentence in (36a) has the structure in (36b), where *try* contains a dependent variable \( x_d \). When the subject raises to [Spec,TP], it is in an appropriate structural position to bind this variable, and because the variable is dependent, this happens obligatorily. The sentence in (37a), on the other hand, has the structure in (37b). Because the variable on *have* is nondependent \( x_{nd} \), it may receive its value from the context.
(36)  
  a. John tried to open the door.  
  b. TP  
     DP  
      John  
      T  
      AspP  
      try($x_d$)  
      vP  
      John to open the door

(37)  
  a. John had to open the door.

Because raising of the subject to [Spec,TP] is $A$-movement rather than $\bar{A}$-movement, no weak crossover violation is expected in (36b). (See below for the formalization.) We do, however, predict a scope freezing effect; i.e., no reconstruction should be possible. (See Hacquard 2006:130.)

According to Landau (to appear), control predicates (which of course on the standard view subsume my subject-oriented raising predicates) have precisely this scope freezing property, in contrast with (non-subject-oriented) raising predicates.

It is worth emphasizing that this account correctly captures the fact that want, try, etc. are subject-oriented and not agent-oriented; that is, it is always the subject that bears the relevant attitude described by the verb, regardless of active/passive voice alternations (38a–b) and regardless of whatever thematic role mappings the embedded verb imposes (38c–d).

(38)  
  a. Kim tried/wanted to hit Sandy.  
  b. Kim tried/wanted to be hit by Sandy.  
  c. Kim tried/wanted to scare Sandy.  
  d. Kim tried/wanted to fear Sandy.

Attitude holder: Kim

However, according to Polinsky & Potsdam (2008), an agent-oriented analysis is warranted for Indonesian mau/ingin ‘want’, which, when the lower predicate is passivized, (optionally) ascribes an attitude to the agent rather than the subject of the prejacent event (39b), and is ungrammatical.
in the absence of such an agent (39c).

(39)  a. anak itu mau/ingin men-cium ibu
child that want ACT-kiss mother
‘The child wants to kiss the mother.’

b. anak itu mau/ingin di-cium oleh ibu
child that want PASS-kiss by mother
‘The child wants to be kissed by the mother.’ OR ‘The mother wants to kiss the child.’

c. #kota ini mau/ingin di-hancurkan oleh api
town this want PASS-destroy by fire
‘#Fire wants to destroy this town.’ (Polinsky & Potsdam 2008:1617–1618, 1625)

I leave it to future research to determine what conditions the choice between subject-orientation and agent-orientation for a given predicate in a given language and what the best way of modeling this difference is.

2.3.5 Formal implementation

Having sketched the basic intuition behind the approach, I will now spell out the formal details, couched within Büring’s (2004; 2005) approach to the syntax-semantics of movement and binding. The first crucial component in Büring’s system is the distribution and interpretation of $\mu_n$ and $\beta_n$, spelled out in (40)–(41).

(40)  a. trace binding (obligatory):

\[
\text{DP}_n \xrightarrow{\mu_n} \text{XP} \Rightarrow LF \quad \text{DP} \xrightarrow{\mu_n} \text{XP}
\]

where $n$ is a movement index

b. \[
[[\mu_n \text{ XP}]]^{w.g} = \lambda x. [[\text{XP}]]^{w.g[t_n \rightarrow x]}
\]

(40) formalizes the way traces are interpreted: when a DP moves, it is coindexed with its trace.

(41)  a. pronoun binding (optional):

\[
\text{DP}_n \xrightarrow{\beta_n} \text{XP} \Rightarrow LF \quad \text{DP} \xrightarrow{\beta_n} \text{XP}
\]

where $n$ is an index, and DP occupies an A-position

b. \[
[[\beta_n \text{ XP}]]^{w.g} = \lambda x. [[\text{XP}]]^{w.g[t_n \rightarrow x]}(x)
\]

(Büring 2004:25)
At LF, the index on the moved DP obligatorily transfers to $\mu$, which changes the assignment function in such a way that the trace is interpreted with the content of the moved DP. (41) formalizes the way bound pronouns are interpreted. The two mechanisms are closely related, but among their differences are that pronoun binding is an optional rather than an obligatory state of affairs, pronoun binding is not possible from an A-bar position, and $\beta$ is type-preserving: it abstracts over the bound pronoun but simultaneously plugs the abstracted argument back in. This is to reflect the fact that unlike a moved constituent and its trace, a bound pronoun and its antecedent involve two distinct sites of interpretation.

The second important ingredient is the familiar idea that reflexive pronouns are special in needing to be bound within some domain. I will adopt the following formulation of this idea:

(42) A reflexive pronoun must be semantically bound in its domain. (Büring 2005:129)

Finally, the third ingredient relates the notion of semantic binding to the distribution of $\beta$:

(43) Semantic binding:

A binder prefix $\beta$ semantically-binds an NP if and only if

a. $\beta$ and NP are coindexed
b. $\beta$ c-commands NP
c. there is no binder prefix $\beta'$ which is c-commanded by $\beta$ and meets (a) and (b)

(Büring 2005:130)

With these components in place, I will now implement the variable binding approach to subject orientation using the example John tried to run. To represent the dependent nature of the variable associated with try in a way that makes the connection to reflexive pronouns explicit, I assume that try incorporates a silent reflexive pronoun: \( \text{try-}0_{self} \). I will have more to say below on why try

---

3. As we saw above, aside from reflexive pronouns, traces are another kind of variable that require an antecedent in the structure. See section 2.4.3 below for justification that the right way to model the dependency of EC predicates like try is via an incorporated reflexive rather than via
does this; for now, what it is important is the consequence that \( \textit{try} \) has the same semantic binding requirement as overt English \(-self\) forms.

I begin by assuming the following pre-movement structure:

(44) $\begin{array}{c}
\text{TP} \\
\text{T} \\
\text{Asp} \\
\text{PST} \\
\text{Asp} \\
\text{PRF} \\
\text{FP} \\
\text{F} \\
\text{VP} \\
\text{try-} \emptyset_{self_1} \\
\text{John run}
\end{array}$

The subject moves to [Spec, TP], resulting in obligatory \( \mu \)-insertion at LF:

(45) $\begin{array}{c}
\text{TP} \\
\mu_2 \\
\text{John} \\
\text{T'} \\
\text{T} \\
\text{Asp} \\
\text{PST} \\
\text{Asp} \\
\text{PRF} \\
\text{FP} \\
\text{F} \\
\text{VP} \\
\text{try-} \emptyset_{self_1} \\
\text{t}_2 \\
\text{run}
\end{array}$

Finally, \( \beta \) is obligatorily inserted to satisfy the distributional requirements on \( \textit{try-} \emptyset_{self} \):

---

an incorporated trace.
(46) is the input to semantic interpretation. For concreteness, I assume the following denotations for the terminal nodes. \( \text{try} \) is a function from properties of events to properties of events. It furthermore contains as part of its meaning a variable that gets valued by the assignment function, and as suggested by the zero suffix \( \emptyset \text{self}_n \), \( \text{try} \) is subject to the same constraint as a reflexive pronoun: it must be bound in some domain. The semantics of perfective aspect and past tense are not crucial; they are included only for concreteness. Type-theoretically, perfective aspect takes a property of events and returns a property of times, and past tense takes a property of times and returns a truth value. \( \text{run} \) is treated as a function from individuals to properties of events. \( \text{John} \) is a constant, and a trace \( t_n \) is evaluated by the assignment function.

\[
(47) \quad [[\text{try-} \emptyset \text{self}_n]]^g = \lambda E(\epsilon t) \lambda e. \text{TRY}(E)(g(n))(e)
\]

\[
(48) \quad [[\text{PRF}]] = \lambda E \lambda t. \text{PRF}(E)
\]

\[
(49) \quad [[\text{PST}]] = \lambda T(\epsilon t). \text{PST}(T)
\]

\[
(50) \quad [[\text{run}]] = \lambda x \lambda e. \text{RUN}(x)(e)
\]

\[
(51) \quad [[\text{John}}] = j
\]
Applying these denotations to the phrase marker in (46), function application proceeds as follows (working bottom-up). To facilitate legibility, the first argument of TRY is underlined throughout.

\[
[[t_n]]^g = g(t_n)
\]

(53) \quad [[t_2 \text{ run}]]^g = \lambda e.\text{RUN}(g(t_2))(e)

(54) \quad [[\text{try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda e.\text{TRY}(\text{RUN}(g(t_2))(e))(g(1))(e)

(55) \quad [[\text{PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda t.\text{PRF}(\text{TRY}(\text{RUN}(g(t_2))(e))(g(1))(e))

(56) \quad [[\text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(g(t_2))(e))(g(1))(e)))

(57) \quad [[\mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda y.\text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(g[t_2 \rightarrow y](t_2))(e))
\quad (g[t_2 \rightarrow y](1))(e)))

(58) \quad [[\mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda y.\text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(y)(e))
\quad (g[t_2 \rightarrow y](1))(e)))

(59) \quad [[\beta_1 \mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda x[\lambda y.\text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(y)(e))
\quad (g[t_2 \rightarrow y][1 \rightarrow x](1))(e)))(x)]

(60) \quad [[\beta_1 \mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda x[\lambda y.\text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(y)(e))(x))(e)))(x)]

(61) \quad [[\beta_1 \mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \lambda x.\text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(x)(e))(x))(e))

(62) \quad [[\text{John} \beta_1 \mu_{self_1} \text{PST PRF try-}\emptyset_{self_1} t_2 \text{ run}]]^g = \text{PST}(\text{PRF}(\text{TRY}(\text{RUN}(j)(e))(j)(e)))

As we see in the final step, $\beta$ and $\mu$ interact to correctly capture the fact that the subject John gets plugged in both for the individual argument associated with try and for the internal argument of run.
2.3.6 Independent support: Subject-oriented inflectional affixes

Independent evidence that something like the mechanism introduced above is necessary comes from the existence of subject-oriented inflectional affixes. In Tauya (Papua New Guinea), for example, the affix we signals conative aspect. If the English gloss in (63) is faithful, then this affix — like English try — entails something about the subject, namely that the subject acted on his or her intent.

(63) [ʔini-we-a-na] nono
    sleep-CON-3SG-REL child
    ‘the child who tried to sleep’ (MacDonald 1990:304)

We can analyze this in precisely the same way we analyzed English try, as in (64).

(64) TP
    DP the child
    T T′
    vP
    Asp_conativeP
        Asp_conative
            we(xd) the child sleep

Also attested are languages that have desiderative affixes corresponding to English want, including Sanskrit (Whitney, 1879), Kalaallisut (West Greenlandic Eskimo) (Sadock, 2003) as well as Japanese, Korean, Tagalog and a handful of other languages (Sugawara, 2005). As illustrated in the Sanskrit example in (65b) and the Kalaallisut examples in (66), the desiderative affix is subject-oriented in the sense that it entails something about the subject (namely, that s/he has a particular desire).

(65) a. nayati ‘he leads’

    SANSKRIT INDICATIVE

b. niniṣati ‘he wants to lead’

    SANSKRIT DESIDERATIVE
Another possible candidate for a subject-oriented inflectional affix is the Spokane Salish success morpheme investigated by Carlson (1996), which “is typically used to indicate that an accomplishment takes place or succeeds only through extra effort” (p. 59). In all of the examples Carlson provides, it is specifically the actor denoted by the subject who put forth the effort, analogous to English manage. In this connection, another possibly relevant case is the so-called ‘out of control’ circumfix in St’átimcets (Lillooet Salish), which Davis et al. (2009) document as encoding a range of possible meanings, one of which corresponds to ‘manage to’.

On a standard view of inflectional morphology, all of these affixes are syntactically ‘raising’, in that they project in the inflectional layer after all of the arguments have been introduced in vP. And yet they still entail something about the subject. Hence there is no necessary connection between subject orientation and control, and the combination of raising and dependent variable binding provides a way of modeling this.

2.4 Characterizing the set of restructuring predicates

In this section, I show that the proposals set forth above shed interesting new light on an old question in the restructuring literature: Why do only some predicates trigger restructuring?

2.4.1 The motivation for restructuring

The question of why only some predicates trigger restructuring goes hand in hand with the even more fundamental question of why restructuring obtains at all. I believe that Cinque’s (2006) theory, by relating restructuring to the structure of IP, puts us in a unique position to address this question. In particular, it suggests a rule like the following:
(67) **Restructuring rule:** For all verbs $V$ and inflectional-layer functional categories $F$, if $[[V]] \subseteq [[F]]$, realize $V$ in $F$.

Note that ‘$F$’ here stands in for a functional category rather than a functional head. I assume that the denotation of a category $F$ is arrived at by generalizing over the denotations of a class of functional heads that all sit in the same position in the structure. The category Mood$_{\text{evidential}}$, for example, has a meaning that subsumes the meanings instantiated by particular evidential morphemes in particular languages.

A natural motivation for a rule like (67) is ‘economy’. The idea is that the inflectional layer of the clause hosts morphemes encoding a full range of modal, temporal, and aspectual meanings. Therefore, whenever one uses a verb that matches one of these meanings, the most economical thing to do is to directly realize that verb in the relevant functional position rather than using a biclausal structure. In slogan form: ‘Don’t do with two clauses what you can do with one clause.’ Restructuring is motivated by a pressure toward monoclausality.

2.4.2 **Arriving at the right generalization**

Now we return to the question of why only some predicates restructure. The theory of restructuring set forth above immediately suggests the following hypothesis:

(68) **Restructuring hypothesis (preliminary):** A verb $V$ restructures just in case $V$ matches the meaning of an inflectional-layer functional head.

In order to test this hypothesis, table 2.1 matches an abridged selection of Cinque’s IP with semantically matching control and raising predicates. In the ‘Restructuring status’ column, ‘−’ indicates that the corresponding predicates tend not to restructure, ‘+’ indicates that they do tend to restructure, and ‘%’ indicates crosslinguistic and/or language-internal variation in restructuring status.

As we see in this table, predicates that correspond to heads above Tense in Cinque’s hierarchy uniformly fail to restructure, whereas predicates that correspond to heads below Tense mostly do
Table 2.1: Testing the ‘Restructuring hypothesis’

(with some points of instability among *try*, *manage*, and *forget*). This observation motivates the a revision to our generalization, spelled out in (69).

(69) **Restructuring hypothesis (revised):** A verb \(V\) restructures just in case \(V\) matches the meaning of an inflectional-layer functional head below Tense.

However, another consideration motivates one more revision to the hypothesis. In a series of papers, Haegeman (2005; 2006; 2010) — building on Cinque’s (2006) observation that Italian *seem* admits clitic climbing for some speakers, as in (70) — argues that for the relevant speakers, *seem* realizes Mood\(_{\text{evidential}}\).
Lo sembrano trovare troppo difficile.

‘They seem to find it too difficult.’ (Haegeman 2010:302)

Two pieces of evidence Haegeman offers in favor of this view are that for the speakers that accept sentences like (70), clitic climbing with *sembrare* is nonetheless ungrammatical in certain contexts, such as in the antecedent to a conditional and in the complement to a factive predicate. (71a) establishes that clitic climbing is in principle available in conditional antecedents and (71b) establishes that *sembrare* is also in principle available in conditional antecedents. But as (71c) shows, *sembrare* may not co-occur with clitic climbing in conditional antecedents. Similarly, (72) shows that *sembrare* may not co-occur with clitic climbing as the complement to a factive predicate.

(71)  
a. Se non **lo** vogliono cambiare, dovrò parlare al direttore.

‘If they don’t want to change it, I’ll have to talk to the manager.’

b. Se sembrano trovar**lo** troppo difficile, faremo il secondo capitolo.

‘If they seem to find it too difficult, we’ll do the second chapter.’

c. *Se **lo** sembrano trovare troppo difficile, faremo il secondo capitolo.

(72)  
a. È strano che sembrino trovar**lo** troppo difficile.

‘It is odd that they seem to find it too difficult.’

b. **È** strano che **lo** sembrino trovar troppo difficile. (Haegeman 2010:306)

Haegeman provides independent evidence to support the idea that conditional antecedents and factive complements have ‘an impoverished left periphery’ and in particular, lack Mood_{evidential}. Hence, the ungrammaticality of (71c) and (72b) are explained naturally on the view that when *sembrare* restructures, it realizes Mood_{evidential}.

Importantly for our purposes, Mood_{evidential} is above Tense in Cinque’s hierarchy, so if Haegeman is right, then *sembrare* falsifies the revised hypothesis. But a key difference between ‘seem’ and all of the other predicates used to exemplify the heads above Tense is that *seem* is not subject-
oriented: it is a canonical ‘raising’ predicate in the traditional sense that it does not entail anything about its subject. This suggests a final revision to the generalization which captures all of the data considered:

(73) **Restructuring generalization (final):** A verb $V$ restructures just in case $V$ matches the meaning of an inflectional-layer functional head $F$, and either $F$ is below Tense or $V$ is non-subject-oriented.

2.4.3 *Explaining the generalization*

Having arrived at the right descriptive generalization, let’s now see how the principles introduced in the previous section provide a natural explanation for why restructuring is found only among predicates that realize heads below Tense and non-subject-oriented predicates. In particular, recall that subject-orientation can be modeled as an individual variable which is part of the meaning of the predicate and which is dependent in the sense that it cannot get its value from the context but rather must be bound by the structurally closest potential binder.

With these ideas in place, we correctly expect that subject-oriented predicates should be able to restructure below Tense. Assuming the subject is interpreted in [Spec,TP] (see section 2.4.4.4 below for elaboration on this assumption), it is able to bind the relevant variable, as in (74). We also correctly expect that subject-oriented predicates should not be able to restructure above Tense. This is so because it would result in a dependent variable that is too high to be bound by anything in the structure, thus yielding an illicit structure, as in (75).
As a consequence of the ungrammaticality of structures like (75), predicates like *claim* which correspond to heads above Tense must instantiate lexical verbs that take full clausal complements: the economy-based pressure against biclausality is trumped by the ungrammaticality of the monoclausal structure. A natural question to ask at this point is whether we predict that (75) could be a well-formed structure if something other than the subject and in particular something in a structurally high enough position were present to bind \( x_d \). Two ways in which we might expect this to happen would be by the presence of something in [Spec,CP], e.g., via topicalization (76a), or by embedding the entire structure under another clause which itself contains a potential binder (76b). ((76a–b) are of course both grammatical, but not with meanings in which it is the structurally higher expression, *John* and *Abby* respectively, that denotes the entity doing the claiming.)

(76)  

a. *John, Bill claims to be ready for.* 

b. *Abby believes that Bill claims to be ready for John.* 

This is where the analogy to reflexive pronouns becomes important, and in particular, the distributional differences between reflexive pronouns and traces. Two important differences between traces and reflexives have to do with structural constraints on the position of the antecedent and on the distance between the antecedent and the variable. First, whereas traces can be bound from an A-bar position, as seen in (77a), reflexives cannot, as seen in (77b) (the so-called ‘crossover’ effect). Second, whereas traces can be bound across indefinitely many clauses, as in (78a), some
classes of reflexive pronouns (including all English -self forms under most conditions) must be bound within a particular structural domain that does not extend across clauses: as we see in (78b), an embedded reflexive can take a matrix argument as its antecedent. Furthermore, this difference cannot be fully attributed to successive cyclic wh-movement in cases like (78b). The adjunct data in (79) establishes that even when there is no intermediate [Spec,CP] position, wh-movement is only moderately deviant, whereas an antecedent-reflexive relationship in a similar kind of structural configuration is robustly ungrammatical.

(77)  
  a. Who₁ does it seem to be raining on t₁?  
  b. *Who₁ does it seem to himself₁ to be raining on t₁?

(78)  
  a. Who₁ did John say that Bill knew (that Joe believed (that Kim mentioned (that Sandy saw)))) t₁?
  b. John₁ said that Bill₂ saw himself₁/₂.

(79)  
  a. ?Who₁ is John mad because Bill fired t₁?
  b. John₁ is mad because Bill₂ fired himself₁/₂.

Thus, as long as we model the dependency associated with subject-oriented restructuring predicates as a reflexive pronoun rather than a trace, we do not predict that topicalization or embedding would save a structure like (75): an expression in [Spec,CP] could not bind the variable, given the general ban on pronoun binding from an A-bar position, and an expression in a higher clause also cannot bind the variable, as long as the binding domain for the variable is something that does not extend across clauses. Given the lack of any evidence that non-restructuring verbs may undergo restructuring just in the presence of an A-bar expression or a higher clause, this is a good result.

Finally, we also correctly expect that non-subject-oriented predicates should be able to restructure above Tense, because in the absence of subject orientation, there is no variable to bind, and so
the structural superiority of the restructuring predicate relative to Tense is irrelevant:⁴

\[
\text{(80)}
\]

\[
\begin{array}{c}
\text{MoodP} \\
\text{Mood} \\
\text{sebrare} \\
\text{TP} \\
\text{DP} \\
\text{John}_1 \\
\text{T} \\
\text{vP} \\
\text{John}_1 \text{ to be ready}
\end{array}
\]

(No variable to bind)

To complete this picture, consider also the availability of non-subject-oriented restructuring below Tense, as for example with the verb start. In this case as in the previous case, there is no variable to bind, and so the availability of restructuring follows trivially.

\[
\text{(81)}
\]

\[
\begin{array}{c}
\text{TP} \\
\text{DP} \\
\text{John} \\
\text{T} \\
\text{AspP} \\
\text{Asp} \\
\text{start} \\
\text{vP} \\
\text{John}_1 \text{ to get ready}
\end{array}
\]

(No variable to bind)

2.4.4 Refining the explanation

Although I believe that the foregoing account is basically right, a more sophisticated understanding of the semantics of the inflectional layer above Tense turns up some issues that require a bit more to be said. Below, section 2.4.4.1 lays out the issues and section 2.4.4.2 suggests the solution. In

⁴. Of course, the surface position of the subject in an Italian sentence with restructuring sebrare is above sebrare. (80) is the structure that holds at LF. See section 2.4.4.4 for a discussion of the relationship between the LF and PF positions of the subject.
suggesting the solution, I will also have a bit more to say about another important question that has
not yet been addressed: why do predicates like try and manage come packaged with a dependent
variable that results in subject orientation? Following this, sections 2.4.4.3 and 2.4.4.4 address two
final matters that warrant discussion.

2.4.4.1 SPEAKER ORIENTATION

Inflectional heads above Tense share a special property: speaker orientation. That is, they uni-
formly entail something about the speaker. There are four heads above Tense in Cinque’s hierarchy,
as shown in (82); let’s consider how each one is speaker-oriented.5

\[ \text{Mood}_{\text{speech act}} > \text{Mood}_{\text{evaluative}} > \text{Mood}_{\text{evidential}} > \text{Mod}_{\text{epistemic}} > \text{Tense} \]

Consider first Mood_{speech act}. In Hidatsa, there exists a declarative affix -c which might be
analyzed as overtly encoding the assertoric force of the proposition it appears in. What is crucial
is that in spelling out its contribution (“I assert that . . .”), reference is made to the speaker (“I”). It
is in this sense that Mood_{speech act} is speaker-oriented.

\[ \text{P} - \text{ˇ} \text{-def} - \text{caw} - \text{ˇ} \]

(Boyle 2007:197) Hidatsa

\[ \text{fish-PL.DEF-DET.DEF hot-DECL} \]

‘The fish were hot.’

\[ \approx \text{‘I assert that the fish were hot.’} \]

Consider next Mood_{evaluative}. This is exemplified by the Korean affix kwun as in (84), whose
contribution is paraphrasable as “I (the speaker) am surprised that . . .”. Again, reference to the
speaker in spelling out the contribution of kwun means that Mood_{evaluative} is speaker-oriented.6

---

5. Interestingly, the adverbs corresponding to the semantic categories in (82) are speaker-
oriented as well, e.g., honestly (Mood_{speech act}), luckily (Mood_{evaluative}), allegedly
(Mood_{evidential}), and probably (Mod_{epistemic}). See Cinque 1999, and see also Ernst 2009
for a non-cartographic semantic approach to these classes of adverbs.

6. Cf. also ‘evaluatives’ in the sense of Landau (to appear). These are similar to Mood_{evaluative}
and to emotive factive predicates in that they involve presupposition of the prejacent proposition

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Moving onto Mood\textsubscript{evidential}, this is a grammatical category found in some languages that encodes information about the evidential basis for a proposition. According to Palmer (2001), the most basic split found in evidential systems is between sensory (evidence culled from any of the five senses) and linguistic (evidence based on someone’s report), as exemplified by data from Ngiyambaa:

\begin{exe}
\begin{itemize}
\item[(85a)] \text{n\textsuperscript{\textit{indu}}\text{-}\textit{gara} girambiyi} \\
\quad you.NOM-EVID sick.PST \\
\quad ‘One can see you were sick.’
\item[(85b)] \text{n\textsuperscript{\textit{indu}}\text{-}\textit{dhan} girambiyi} \\
\quad you.NOM-EVID sick.PST \\
\quad ‘You are said to have been sick.’ (Palmer 2001:17–18)
\end{itemize}
\end{exe}

(85a–b) have identical propositional content: “You were sick.” They differ only in what they encode about the evidential basis for the proposition: in (85a), the evidence is sensory whereas in (85b) the evidence is linguistic. Mood\textsubscript{evidential} is speaker-oriented in the sense that it encodes the speaker’s evidence for a proposition. See Murray 2010 for a recent take on the semantics of evidentality.

plus the speaker’s evaluation, but differ in that they pass judgment on the entity denoted by the subject:

(i) John was stupid to act like that.

According to Landau (to appear), ‘evaluatives’ in this sense belong in the EC class, which by hypothesis for me means that they correspond to some head below Tense in Cinque’s hierarchy. I leave this as a matter for future research. See also Barker 2002 for a semantics for sentences like (i).
Finally, consider $\text{Mod}_{\text{epistemic}}$. It is well established that epistemic modality is keyed to the speaker. (See Hacquard 2010 and references therein.) For example, take a sentence like (86), considered by Hacquard (2010), on a reading in which the modal has epistemic force. The proposition applied to the modality has past tense (“Mary was at home”), but the modality itself is keyed to the speaker, as evidenced by the fact that we can paraphrase the contribution of the modality as “Given what I (the speaker) know…”.

(86) Mary had to be home. Hacquard 2010

$\approx$ Given what I know, it must be the case that Mary was home.

These facts raise two related questions. First, what is the semantic representation of speaker orientation? Second, why is speaker orientation found exclusively among heads above Tense? Hacquard’s (2010) investigation of epistemic and root interpretations of modals provides interesting answers to both of these questions.

In particular, Hacquard is concerned with understanding why — given the same modal expression, such as $\text{have}$ — the individual and time that it is keyed to depends on the kind of modality involved.

(87) a. Mary had $\text{circumstantial}_{\text{circumstantial}}$ to take the train.

    $= \text{Given Mary’s/*my circumstances then/*now, Mary had to take the train.}$

b. Mary had $\text{epistemic}_{\text{epistemic}}$ to be home.

    $= \text{Given what I/*Mary know(s) now/*then, it must be the case that Mary was home.}$

In (87a), $\text{have}$ encodes circumstantial modality, and as indicated by the paraphrase, this makes it sensitive to the individual denoted by the subject (or, as we saw in section 2.3.2 above, some other discourse-salient individual) and the VP event time. In (87b), on the other hand, $\text{have}$ encodes epistemic modality, and as indicated by the paraphrase, this makes it sensitive to the speaker and the speech time.
To explain the correlation between modal flavor, individual-anchoring, and time-anchoring, Hacquard makes the following proposals:

(88) Core proposals in Hacquard 2010

a. Epistemic modality is encoded above Tense whereas circumstantial modality is encoded below Tense (Cinque, 1999).

b. Modals are keyed to events: a modal contains an event variable that must be bound.

c. Monoclausal structures contain two potential event binders: one associated with the speech event which sits high in the structure, and one associated with the VP event which sits just below Tense.

d. For structural reasons, the position of a modal relative to Tense determines which event binder binds its event variable.

For Hacquard, making modals keyed to an event is designed to capture their dual sensitivity to both an individual and a time. The idea is that from an event binder, both the time of the event and the individuals that participated in the event are recoverable, and so speaker-relativity goes hand-in-hand with speech time relativity and VP event participant relativity goes hand-in-hand with VP event time relativity. Here, because I am not concerned with modals’ time-relativity, I will recast Hacquard’s ‘event relativity’ using purely ‘individual relativity’ for the purpose of illustration.

Hacquard’s core proposals — recast using ‘individual-relativity’ rather than ‘event-relativity’ — work as illustrated in (89)–(90). In (89), have encodes epistemic modality, and so it projects above Tense in the structure. It contains an individual variable that must be bound. Because it is high in the structure, its closest potential binder (and hence, only potential binder) is speaker. Therefore, epistemic modality is keyed to the speaker. In (90), on the other hand, have encodes circumstantial modality, and so it projects below Tense in the structure. It also contains an individual variable that must be bound, but the crucial difference in this case is that when the subject raises to [Spec,TP], it becomes the closest potential binder and hence binds this variable. Therefore, cir-
cumstantial modality is keyed to the subject. (As we saw above, deontic *have* is not necessarily
subject-oriented, but for Hacquard, it must be keyed to some individual in the VP event. In (89b)
this is not captured because I am translating Hacquard’s ‘event relativity’ into ‘individual relativ-
ity’, but the idea in Hacquard’s original proposal is that the modal is bound by the VP event, and
from this, any of the participants in the VP event may provide the individual anchor.)

(89)  

(a) Mary had to be home.

(b)  

In a nutshell, what is important here is that modal expressions above Tense — just like modal
expressions below Tense — are keyed to an individual. What sets them apart is that the individual
they are keyed to is the speaker. This is potentially worrisome for my account of why subject-
oriented predicates cannot restructure above Tense. Recall my explanation for why a predicate like
*believe* does not restructure: it corresponds to a head above Tense (in this case, Mod_{epistemic}), but
it contains a variable that must be bound. Because it is too high in the structure for the subject to bind it, the result is ungrammaticality, as in (91).

\[
\text{(91) } \begin{array}{c}
\text{ModP} \\
\text{Mod} \\
\text{believe}(x_d) \\
\text{DP} \\
\text{John}_1 \\
\text{T} \\
\text{vP} \\
\text{John to be ready}
\end{array}
\]

$x_d$ too high to be bound!

But now we have seen that individual arguments above Tense are bound by the speaker. This raises the question of why (92a) is not a licit structure with the interpretation in (92b).

\[
\text{(92) } \begin{array}{c}
\text{a. } \\
\text{SPEAKER}_1 \\
\text{ASSERT} \\
\text{ModP} \\
\text{Mod} \\
\text{believe(1)} \\
\text{DP} \\
\text{John}_1 \\
\text{T} \\
\text{vP} \\
\text{John to be ready}
\end{array}
\]

b. Intended interpretation: I (the speaker) believe that John is ready.

In other words, why — on the account I am developing here — can restructuring predicates above Tense not be speaker-oriented just like inflectional heads above Tense?\footnote{This point is perhaps easier to illustrate using a language that has overt restructuring effects and in which believe can be used as a control predicate. Italian fits the bill. As shown in (i), credere}
2.4.4.2 Restructuring and type-shifting

Here I will suggest how we can reconcile the speaker orientation facts with my account of the restricted nature of restructuring above Tense. In particular, the following three proposals are required.

(93) a. The speaker of a sentence is not represented syntactically; rather, speaker orientation is achieved via a nondependent variable that comes with a presuppositional filter to the effect that it is valued by the speaker.

b. All predicates (restructuring or not) are underlyingly lexical, and some of them come with individual arguments.

c. A ‘restructuring rule’ allows for a lexical verb to realize a functional category (provided it has the right kind of meaning), and for type-theoretic reasons, if this verb has an individual argument, it is converted into a dependent variable.

Here I will elaborate on these proposals and show how they render innocuous the issue raised above.

As stated in (93a), the first crucial step is in thinking that the speaker of a sentence is not actually represented in the syntax and that instead, speaker orientation is achieved via a nondependent

‘believe’ disallows clitic climbing, and it is obligatorily the matrix subject and not the speaker that corresponds to the belief holder.

(i) a. Gianni crede di averllo visto.
   ‘John believes to have seen him.’

   Not: ‘I believe John to have seen him.’

b. *Gianni llo crede di avere visto.
   Intended: ‘I believe John to have seen him.’

The question is why (ib), with the intended interpretation, is ruled out.

8. Whether or not concepts like speaker and addressee are syntactically encoded in the left clausal periphery is in fact subject to ongoing debate. For recent arguments in favor of such a view, see Speas & Tenny 2003, who put the idea to use to develop a grammatically constrained theory of possible speech acts, and see Baker 2008, who puts the idea to use in accounting for the distribution of embedded shifted indexicals. Such an idea has also been put to use in accounting for split control; see Madigan 2008 and references therein.
variable (i.e., a variable that can be valued from the context) with a special presuppositional filter that is indexed to the speaker. (This is the same presuppositional filter on the referential value of a first-person singular pronoun: see e.g. Heim 2008. I depart from Heim, however, in taking the filter to be built into the variable itself rather than projecting separately in the syntax.) For concreteness, consider the examples in table 2.2. I assume that the heads above Tense all have a similar type-theoretic semantics in that they take a proposition and return a new proposition. Their speaker orientation arises because in addition to their propositional argument, they each contain a nondependent variable with a special presuppositional filter: $x_{\text{speaker}}$ can be valued by the context and comes with a presupposition that its value corresponds to the speaker of the sentence.\(^9\)

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
<th>Denotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood\textsubscript{speech act}</td>
<td>Hidatsa assertive -c</td>
<td>$\lambda p.\text{ASSERT}(p)(x_{\text{speaker}})$</td>
</tr>
<tr>
<td>Mood\textsubscript{evaluative}</td>
<td>Korean mirative -kwun</td>
<td>$\lambda p.\text{SURPRISE}(p)(x_{\text{speaker}})$</td>
</tr>
<tr>
<td>Mood\textsubscript{evidential}</td>
<td>Ngiyambaa sensory -gara</td>
<td>$\lambda p.\text{SENSE}(p)(x_{\text{speaker}})$</td>
</tr>
<tr>
<td>Mod\textsubscript{epistemic}</td>
<td>English epistemic must</td>
<td>$\lambda p.\text{EPIS}(p)(x_{\text{speaker}})$</td>
</tr>
</tbody>
</table>

Table 2.2: Example denotations for inflectional heads above Tense

Consider now the crucial distinction between, e.g., Korean mirative suffix -kwun, illustrated in (94a), and English factive predicate be surprised, illustrated in (94b).

John-NOM good grade-ACC receive-ANT-EVAL  
'I (the speaker) am surprised that John got a good grade.'

b. John is surprised to have gotten a good grade.

9. Two qualifications are in order. First, the approach needs to be further refined a bit: Hacquard (2010) shows that in embedded contexts, epistemic modals become relativized to the matrix attitude bearer rather than to the speaker. This suggests that, for the heads that behave this way, the notion of speaker needs to be loosened up a bit to something like — borrowing Hacquard’s wording — local knowledge bearer. Second, even with this refinement in place, this approach misses an elegant feature of Hacquard’s: for Hacquard, the speaker orientation of heads above Tense follows for structural reasons precisely because the heads are above Tense. On this alternative picture, however, there is no obvious reason why the variable $x_{\text{speaker}}$ should not be found among heads that are below Tense as well. Ideally, then, there is some other way of deriving this generalization on this alternative approach.
The structure for (94a) is indicated in (95): *kwun* contains a nondependent variable with a presuppositional filter that yields subject orientation. The restructured version of (94b), on the other hand, is as indicated in (96): here, the crucial difference is that whereas *-kwun* contains a nondependent variable, *be surprised* has a dependent variable $x_d$. Hence it cannot be valued by the context and the structure is ruled out: *be surprised* must be realized as the matrix predicate of a biclausal control structure, and this is why it (and factive predicates as a class) resist restructuring crosslinguistically.

But this account just pushes the question further back: why is it the case that the hypothetical restructuring variant of *be surprised* contains a dependent variable $x_d$ and not a speaker-oriented nondependent variable $x_{\text{speaker}}$?

This question brings us to the second proposal: all predicates (restructuring or not) are underlyingly lexical. That is, I follow Cinque (2006) in thinking that (at least under some conditions)
restructuring predicates obligatorily realize functional heads. But I depart from Cinque (2006) in that I maintain that these predicates are underlyingly lexical.

Three considerations motivate this move. First, restructuring verbs have transitive uses, as in (97). If the verbs in (97) are functional, then there is no main verb, which is an undesirable result. One route would to be maintain as Cinque does that the verbs in (97) are functional but that their complement contains a silent main verb. As I will discuss in Chapter 3, however, this proposal does make good sense for want, but not for other verbs like try, manage, and start.

(97)  a. I tried the new game.
     b. I managed the trip back from Europe without any mishaps.
     c. I started the car.

Second, restructuring verbs admit agentive -er suffixation just like regular lexical verbs. (See Barker 1998 and references therein for analyses of -er as well as the closely related suffix -ee.) In order to maintain the generalization that -er applies to lexical verbs (not functional heads) and returns nouns used to predicate agency, it must be the case that restructuring verbs like try, manage and start have lexical uses.

(98)  a. tryer
     b. manager
     c. starter

The third consideration has to do with the unidirectionality of language change: grammaticalization proceeds from ‘lexical’ to ‘grammatical’/‘functional’ rather than vice versa. (See e.g. Haspelmath 2004 and references therein.) That is, one could counter that transitivity and -er suffixation depend on a lexical use deriving from an original functional base. But diachronic evidence suggests that lexicality is historically and hence conceptually prior to functionality, and so it is more likely that try and its ilk are underlyingly ‘lexical’ and have derived functional uses rather
than vice versa.

But if restructuring verbs are underlyingly lexical, this has type-theoretical consequences. Unlike inflectional-layer functional heads, lexical verbs can be more than just one-place predicates. Therefore, just as the lexical verb *claim* takes an individual argument corresponding to the ‘claimer’, so lexical *try* takes an individual argument corresponding to the ‘tryer’. In *John tried the game*, for example, there is an entailment that John did something. For concreteness, let’s assume that *claim* has a denotation like (99a): it takes a proposition argument and an individual argument and returns a new proposition. For *try*, in turn, let’s say that on its underlying lexical use, it has a denotation like (99b): it takes a property of events argument and an individual argument and returns a new property of events. (On the internal content of the TRY function buried in this denotation, see Sharvit 2003; Grano 2011, and chapter 3 section 3.5.3.2 below.)

(99) a. \([\text{claim}] = \lambda p_{(st)} \lambda x. \text{claim}(p)(x)\)

b. \([\text{try}] = \lambda P_{(et)} \lambda x \lambda e. \text{try}(P)(x)(e)\)

But now, if either of these heads is realized as a functional category, a type mismatch results. As illustrated in (100), after *try* combines with its complement, the result cannot compose with PRF, due to the extra ⟨e⟩ argument in *try*.\(^{10}\)

---

10. For type-theoretical concreteness, I assume following Hacquard (2006) that perfective aspect takes a property of events and returns a property of times, and that tense is pronominal and saturates this time argument. But this is not crucial: the same point could be made under different assumptions about the semantics of tense and aspect.
What I propose is that the Restructuring Rule — i.e., the economy principle that requires verbs with appropriate meanings to be realized as functional heads — deals with this type mismatch by systematically converting λ-bound individual arguments into dependent variables $x_d$. The function of this type-shift is reminiscent of the distinction between ‘restriction’ and ‘saturation’, which Chung & Ladusaw (2004) argue are both attested modes of semantic composition in natural language. The input to the Restructuring Rule reflects the ‘saturation’ option in that supplying the individual argument reduces the adicity of the predicate; the output to the Restructuring Rule, on the other hand, reflects the ‘restriction’ option in that supplying the individual argument is a matter of valuing a variable in the predicate without changing the basic type of the predicate.

(101) **Restructuring Rule:** For all verbs $V$ and inflectional-layer functional categories $F$, if $[[V]] \subseteq [[F]]$ and the complement to $V$ is an extended verbal projection\(^{11}\), replace $V$ with $V'$ and realize $V'$ in $F$.

---

\(^{11}\) “and the complement to $V$ is an extended verbal projection”: This clause is in place to ensure that the relevant verbs do not realize functional heads when they are not in a syntactically appropriate frame, such as in their transitive uses whereby their complement is a DP and they retain their lexical status.
a. If \([[[V]] = \lambda \ldots \lambda x \lambda \ldots [\text{function} \ldots (x) \ldots ]\),

then \([[V'] = \lambda \ldots \lambda \ldots [\text{function} \ldots (x_d) \ldots ]]]

b. Otherwise, \([[V]] = [[V']]]]

In prose, what (101a) states is that if the relevant verb has among its arguments an individual argument \((\lambda x)\), then when it restructures, its denotation will be just the same except that the individual argument disappears and is replaced by a dependent variable \(x_d\) corresponding to that argument on the right side of the function. If on the other hand the verb has no individual argument, then its restructured equivalent is identical, as guaranteed by (101b). This will be the case for a non-subject-oriented verb like \textit{start}.\(^{12}\)

The intuition underlying this mechanism is that the choice to use a function with a \(\lambda\)-bound argument comes with an obligation to ‘discharge’ that argument in some way. The proposed type-

\(^{12}\)One might object to the claim that \textit{start}, on its lexical use, lacks an individual argument, on the basis of data like (i), which show that on its transitive (and hence lexical) use, \textit{start} patterns with \textit{try} and \textit{manage} in entailing something about the subject.

(i) a. John managed the trip. (\(\rightarrow\) John did something.)
    b. John tried the game. (\(\rightarrow\) John did something.)
    c. John started the car. (\(\rightarrow\) John did something.)

The crucial feature about lexical \textit{start}, however, is that, unlike \textit{manage} and \textit{try}, it participates in the causative/inchoative alternation:

(ii) a. John managed the trip.
    b. *The trip managed.

(iii) a. John tried the game.
    b. *The game tried.

(iv) a. John started the car.
    b. The car started.

What this suggests is that the entailment in (ic) does not come from \textit{start} but rather from concealed causative morphology. I therefore assume that \textit{start} takes a property of events as its sole internal argument which in cases like (ic) and (ivb) coerces the relevant nominal argument into an eventive meaning, as proposed by Pustejovsky (1995).
shifting rule preserves that obligation by replacing the argument with a variable that has a particularly stringent distribution: it must be bound in the structure and cannot receive a value from the context. We might understand this conversion as reflecting a more general principle (‘preserve context (non)dependence’) that may characterize type-shifting rules as a class, though I will not investigate this possibility any further here.

Returning to our example denotations for claim and try repeated in (102), let’s assume that the statements in (103) hold and that therefore, both predicates are candidates for restructuring.

\[(102)\]
\[
a. \quad [[[claim]]] = \lambda p_{(st)} \lambda x.\text{claim}(x)(p)
\]
\[
b. \quad [[[try]]] = \lambda p_{(et)} \lambda x \lambda e.\text{try}(P)(x)(e)
\]

\[(103)\]
\[
a. \quad [[[claim]]] \subseteq [[[\text{Mood}_{speech\, act}]]]
\]
\[
b. \quad [[[try]]] \subseteq [[[\text{Asp}_{conative}]]]
\]

By our new Restructuring Rule, claim and try can both be type-shifted as in (104): their individual arguments are replaced by dependent variables.\(^{13}\)

\[(104)\]
\[
a. \quad [[[claim']]] = \lambda p_{(st)} .\text{claim}(x_d)(p)
\]
\[
b. \quad [[[try']]] = \lambda p_{(et)} \lambda e.\text{try}(P)(x_d)(e)
\]

Now, both claim and try can realize their respective functional head without incurring a type mismatch. But now they contain a variable that must be bound. Crucially, because try realizes a head that is below Tense, its variable will be bound by the subject in [Spec,TP], whereas because claim realizes a head that is above Tense, its variable will remain unbound and yield ungrammaticality.

\(^{13}\) An alternative lexically-based approach, of course, would be to replace the type-shifting rule with an enriched lexicon in which every predicate that corresponds semantically to an inflectional-layer functional head is paired with a counterpart whereby any \(\lambda\)-bound variable is replaced with a dependent variable. As far as I can tell, this alternative is equal in empirical coverage, differing only in trading off a type-shifting operation for a more cumbersome lexicon.
This is illustrated in (105) and (106) respectively.\(^\text{14}\)

\[(105)\]

\[
\begin{array}{c}
\text{TP} \\
\text{DP} \\
\text{John}_1 \\
\text{T'}:\langle t \rangle \\
\text{T}:\langle i \rangle \\
\text{AspP}:\langle it \rangle \\
\text{Asp}:\langle et, it \rangle \\
\text{Asp}:\langle it \rangle \\
\text{Asp}_{\text{conative}}: \langle et, (et) \rangle \\
\text{vP}: \langle et \rangle \\
\text{try}(x_1) \\
\end{array}
\]

\[
\begin{array}{c}
\text{vP}: \langle et \rangle \\
\end{array}
\]

\[
\text{John open the door}
\]

\[(106)\]

\[
\begin{array}{c}
\text{Mood}_{\text{speech act}} \text{P}: \langle t \rangle \\
\text{Mood}_{\text{speech act}}: \langle st, t \rangle \\
\text{claim}(x_d) \\
\text{DP} \\
\text{John}_1 \\
\text{T'}:\langle t \rangle \\
\text{T}:\langle i \rangle \\
\text{AspP}:\langle it \rangle \\
\text{Asp}:\langle et, it \rangle \\
\text{vP}: \langle et \rangle \\
\text{John to be ready}
\end{array}
\]

Because of the unbound dependent variable in (106), the structure is ruled out, and so \textit{claim} (and verbs corresponding to heads above Tense in general) must be realized as a main verb.

\(^{14}\) As mentioned above (see note 4), the claim is that the configuration in (106) holds at LF (not necessarily at PF). See section 2.4.4.4 for more on the relationship between the LF and PF positions of the subject.
A non-subject-oriented verb like Italian *sembra* ‘seem’, on the other hand, will not have a problem restructuring above Tense. Haegeman (2005, 2006, 2010) shows that when restructuring effects do not obtain, *sembra* optionally takes an overt experiencer argument, as in (107a). In the absence of an overt experiencer argument, the experiencer is understood to be the speaker, as in (107b).

(107)  

a. Gianni *sembra a tutti* apprezzarlo molto.  

‘Gianni seems to everyone to appreciate it a lot.’ (Haegeman 2005:154)

b. Gianni *sembra* apprezzarlo molto.  

‘Gianni seems [to me] to appreciate it a lot.’

We can model this duality by saying that lexical *sembra* has two alternative denotations: one where it takes an overt experiencer argument, as in (108a), and one where the experiencer argument is valued contextually with a presuppositional filter that limits it to the speaker, as in (108b).

(108)  

a. \[ [[sembra_1]] = \lambda p \lambda x. \text{SEEM}(p)(x) \]

b. \[ [[sembra_2]] = \lambda p. \text{SEEM}(p)(x_{\text{speaker}}) \]

As long as (108b) is chosen as the input to the Restructuring Rule, the output will not contain a dependent variable, and so restructuring above Tense is possible. (Ideally, of course, we would want to unify the two uses of *sembra* under a single denotation, but the point is that no matter how this is done, a consequence will be that (108b) is a possible meaning for this verb.)

2.4.4.3 A split in the classification of ‘desire’ predicates

There is crosslinguistically stable variation in the class of predicates that Landau (2000) calls desiderative: crosslinguistically, *want* is among the most stable restructuring predicates, but other desiderative verbs like *wish* and *prefer* tend not to restructure. See for example table 2.3, which is an excerpt from Wurmbrand’s table of restructuring status by predicate type in five languages.
Given this restructuring data, the account developed above leads us to predict that \textit{want} corresponds to a head below Tense in Cinque’s IP whereas \textit{prefer}, \textit{wish} and other non-restructuring desiderative predicates correspond to a head above Tense. Furthermore, given the fact that, as we saw, heads above Tense are speaker-oriented, this leads us to the prediction that one of these heads (the one above Tense) is speaker-oriented and the other one (the one below Tense) is not.

And in fact, this prediction is borne out in the distinction between \textsc{desiderative} mood and \textsc{optative} mood. The former is used to label verbal morphology that encodes desire on the part of the subject and the latter is used to label verbal morphology that encodes desire on the part of the speaker (see Grosz 2011 for a recent take on the semantics of optative constructions). Sanskrit illustrates this contrast nicely since it happens to have both kinds of morphology:

(109) a. nayati ‘he leads’ \hspace{1cm} \textsc{sanskrit indicative}
    b. niništati ‘he wants to lead’ \hspace{1cm} \textsc{sanskrit desiderative}
    c. nayet ‘may he lead’ \hspace{1cm} \textsc{sanskrit optative}

The following example from Classical Greek further illustrates optative mood. Crucially, the desire it expresses is speaker-oriented rather than subject-oriented:

(110) ó: paí génoio patró̂s eutukhésteros o child become.2SG.AOR.OPT of.father luckier
‘My child, mayst thou be luckier than thy father’ (Palmer 2001:205)

\[ \approx \text{‘My child, I wish for you to be luckier than your father.’} \]
\[ \neq \text{‘My child, you wish to be luckier than your father.’} \]

\textsc{classical greek}

The English inverted \textit{may} construction, illustrated in (111) might also be considered a kind of
optative mood, as well as a few frozen expressions like those in (112):

(111)  
  a. May the force be with you.  
  b. ≈ I wish for the force to be with you.  
  c. ≠ The force wishes to be with you.

(112)  
  a. God help us.  
  b. God save the queen.

The split in restructuring status of desiderative predicates now makes sense as long as we make the set of assumptions in (113). First, there are two IP ‘desiderative’ heads, one of which sits above Tense (Mood\textsubscript{optative}) and one of which sits below Tense (Mod\textsubscript{volitional}).\textsuperscript{15} Second, want corresponds to Mod\textsubscript{volitional}. Third, wish, prefer and other desiderative predicates correspond to Mood\textsubscript{optative}. Together with the principles discussed in the previous section, we now correctly predict that only want should behave like a restructuring predicate.

(113)  
  a. Mood\textsubscript{optative} > T > Mod\textsubscript{volitional}  
  b. want → Mod\textsubscript{volitional}  
  c. wish, prefer → Mood\textsubscript{optative}

Of course, there still remains the mystery of why want does pattern with the other desiderative predicates in supporting Partial Control. This problem will be taken up in chapter 3.

2.4.4.4 The position of the subject: LF vs. PF

The proposals in this chapter rely crucially on two ideas. First, there are a number of inflectional heads above Tense, as illustrated in the abridgment of Cinque’s (1999; 2006) hierarchy in (114). Second, the subject can only bind variables that are below Tense.

\textsuperscript{15}Cinque (1999:55) in passing classifies ‘optative’ mood as a subtype of speech act mood. Since Mood\textsubscript{speech act} sits above Tense, this approach is also viable.
Mood\textsubscript{speech act} > Mood\textsubscript{evaluative} > Mood\textsubscript{evidential} > Mod\textsubscript{epistemic} > Tense > …

Since binding conditions hold at LF, this entails that the highest position that the subject can occupy at LF is [Spec,TP]. And indeed, preliminary evidence suggests that this is correct: von Fintel & Iatridou (2003) argue that subject-position quantifiers obligatorily take narrow scope with respect to epistemic modals (their ‘Epistemic Containment Principle’). Since Mod\textsubscript{epistemic} projects above Tense in (114), this is exactly what we expect. von Fintel & Iatridou (2003) base this generalization on the interpretation of sentences like (115). If the subject were scopally ambiguous with respect to the modal, then we would expect two possible readings: the first is compatible with a situation in which the speaker knows that some students have \textit{not} left, but for any given student, the speaker cannot say whether s/he has left or not. The second, however, is compatible only with a situation in which for all the speaker knows, every student has left. In fact, though, (115) is compatible only with the second reading.

(115) Every student may have left.
   a. *every student > may: for every student, it may the case that s/he left.
   b. ✓ may > every student: it may be the case that every student left.

Although more research is needed here, my prediction is that the same scopal restriction should obtain between the subject and all of the other heads that are above Tense in Cinque’s hierarchy.\textsuperscript{16} It is also worth noting that my proposals do not make any predictions about the scope of the subject with respect to Tense itself: in the highest licit position, the subject takes scope over Tense, but this leaves open the possibility that (as long as no binding relations are at stake) further reconstruction can take place as well, in which case the scopal relation between Tense and the subject will be reversed. In any case, according to Tonhauser (2007), the literature on the temporal interpretation

\textsuperscript{16} Another prediction made by Cinque’s hierarchy is that the heads above Tense should obligatorily take wide scope over Tense. This prediction is borne out for Mod\textsubscript{epistemic} (Picallo, 1990; Iatridou, 1990; Stowell, 2004; Hacquard, 2010); additional research is needed for the other heads above Tense.
of noun phrases (see Enç 1986; Musan 1995, 1999; Tonhauser 2007) agrees that noun-phrase time is contextually determined rather than being determined by the tense of the predicate.

At PF, however, the situation is different: the subject is found above e.g. English epistemic must (which realizes Mood_{epistemic}) and above Italian restructuring verb sembra ‘seem’ (which realizes Mood_{evidential}):

\begin{align*}
\text{(116) a. John must be at home.} \\
\text{b. Gianni lo sembra trovare troppo difficile.} \\
\text{‘Gianni seems to find it too difficult.’}
\end{align*}

To account for the high surface position of the subject, what we can say is that S-Agr (the head that attracts the subject for agreement purposes) projects over all other heads in IP, like so:

\begin{align*}
\text{(117) S-Agr > Mood_{speech act} > Mood_{evaluative} > Mood_{evidential} > Mod_{epistemic} > Tense} \\
\text{> …}
\end{align*}

What remains to be reconciled, then, is why the overt position of the subject is at the top of IP whereas its highest logical position is in [Spec,TP]. Two options are available. One possibility is ‘obligatory reconstruction’: the subject moves to [Spec,S-AgrP] and then at LF it obligatorily reconstructs to [Spec,TP]. See von Fintel & Iatridou 2003 for an approach in this spirit. The other option is to think that the overt position of the subject reflects a PF-movement that takes place after LF. See Sauerland & Elbourne 2002 for an approach to reconstruction along these lines. Since both of these approaches are compatible with my proposals, I leave it to further research to adjudicate between them as well as to address the deeper question of why the mismatch between the LF position and the PF position of the subject obligatorily obtains.
2.5 Conclusion

This chapter had two main goals. The first was to show how the semantic phenomenon of subject-orientation can be dissociated from the syntactic mechanism of control. I argued that two previous ideas in the literature pave the way for such a dissociation. First, modal expressions contain individual variables (Hacquard, 2010). Second, some variables are dependent in that they cannot get their value from the context (Giannakidou, 1998). When a raising predicate contains a dependent variable, then when the subject raises to its surface position, it obligatorily binds this variable, thus simulating the semantic effects of control in a raising structure. In this way, we can maintain Cinque’s (2006) proposal that restructuring predicates are uniformly raising, even those that pass the standard tests for control in the sense that they entail something about their subject.

The second goal of the chapter was to show that the dependent variable approach to subject orientation sheds interesting new light on an old question in the restructuring literature: why only certain semantic classes of predicates tend crosslinguistically to restructure. I set forth a novel descriptive generalization: predicates corresponding to heads below Tense in Cinque’s IP tend to restructure whereas predicates corresponding to heads above Tense in Cinque’s IP do not. I argued that this was because when a predicate restructures above Tense, it leaves a dependent variable unbound, thus yielding ungrammaticality.

In refining this explanation, I showed also that the inflectional heads above Tense share a special property: speaker orientation. I argued that restructuring predicates cannot value their dependent variables via speaker orientation because (1) speaker orientation involves contextual variable binding, which is not available for dependent variables; (2) all predicates (restructuring or not) are underlyingly lexical, and (3) restructuring is driven by an economy principle that allows a lexical head to be realized in a functional position and has the consequence that any individual arguments in the underlying lexical denotation are replaced by dependent variables.
CHAPTER 3
EXPLAINING THE MIXED PROPERTIES OF WANT

3.1 Introduction

The purpose of this chapter is to explain the mixed properties of want as articulated in the two previous chapters. I begin by reviewing precisely what I mean in saying that want has mixed properties and why addressing this fact is a vital step in the overall argumentation of the dissertation. In chapter 1, I argued that Landau’s (2000) division of ‘control’ verbs into EC and PC varieties tracks a total of four splits in behavior, repeated in (1).

\[(1)\]
\[\text{a. Finite complementation: PC predicates admit finite complements; EC predicates do not.}\]
\[\text{b. Overt embedded subjects: PC predicates admit overt embedded subjects; EC predicates do not.}\]
\[\text{c. Restructuring: EC predicates restructure; PC predicates do not.}\]
\[\text{d. Subject orientation: EC predicates do not always entail something about their subject; PC predicates always do.}\]

I furthermore argued that all of these correlations can be shown to follow from the theory of restructuring advocated by Cinque (2006), whereby PC verbs instantiate biclausal control structures (as on the traditional view) but EC verbs instantiate monoclausal raising structures in which the EC verb realizes a functional head in the inflectional layer of the clause.

The verb want and its crosslinguistic kin, however, constitute an important exception to the correlations in (1) and hence also to the theoretical account which I have proposed in order to derive these correlations. On the one hand, want supports PC (2a) and allows for an overt embedded subject (2b). But on the other hand, like an EC predicate, it disallows finite complementation in English (3a), and it tends crosslinguistically to restructure, as evidenced for example by the
availability of clitic climbing for Italian *volere* ‘want’ in (3b).

(2) PC properties of *want*

a. John said that Bill wanted to meet together at noon.  
PARTIAL CONTROL

b. John wanted Bill to go.  
OVERT EMBEDDED SUBJECT

(3) EC properties of *want*

a. *John wanted that he do it.  
*FINITE COMPLEMENTATION

b. Gianni io vuole fare.  
‘Gianni wants to do it.’  
RESTRUCTURING

I now turn to a couple of considerations that will narrow the scope of the problem. First, I will have nothing to say in this chapter about the temporal properties of *want*, including why it allows tense mismatches, which for Landau is a criterial property of the PC class. Landau’s opposition between ‘tense matching’ and ‘tense mismatching’ will need to be refined in light of more nuanced differences in temporal orientation that exist among EC and PC verbs (see e.g. Wurmbrand 2006, 2007, 2011) and hence I will set this topic aside until it can be given the more detailed attention it deserves in chapter 4. Second, I will not be concerned with the fact that *want* is subject-oriented (i.e., entailing something about its subject and therefore passing the standard tests for control). This is not unique to *want* but extends as well to other restructuring verbs like *try* and *manage* which also entail something about their surface subject (cf. e.g. *start, finish, can* and *must*, which do not). Instead, I will explicitly assume where necessary the results from chapter 2, where I argued that although restructuring verbs are syntactically raising, they simulate control properties by containing a dependent variable as part of their meaning which gets bound by the surface subject. See chapter 2 for arguments for why this is the correct approach.

With the aforementioned matters out of the way for now, the goal of the chapter is to make sense of the facts in (4).
(4) Mixed properties of want to be reconciled in this chapter:

a. Monoclusal properties: crosslinguistically stable restructuring status; ban on finite complementation in English

b. Biclausal properties: PC; embedded subject possible

In a nutshell, the solution I will propose for explaining this state of affairs is as follows. Following Cinque (2006), I take the restructuring status of want as decisive in indicating that it is a functional head in the inflectional layer of the clause, and hence should exhibit monoclusal properties only. To explain why it nonetheless supports PC and embedded subjects, I draw on a suggestion made by Cinque to argue that although want is an inflectional head, it is (near-)unique among inflectional heads in being able to project over a silent main verb ∅ have. Such a silent verb has been independently argued for to explain the interpretation of apparent DP complements to want (e.g., want an apple) (Ross 1976; McCawley 1979; den Dikken et al. 1996; Fodor & Lepore 1998; Harley 2004; Cinque 2006; though cf. Wechsler 2008), and what I will argue (following a suggestion which Cinque attributes to Dominique Sportiche) is that ∅ have may embed a verbal projection as well. When the subject of the verbal projection is overt, the result is an embedded subject, and when the subject of the verbal projection is PRO, the result is the capacity for PC. In order to further substantiate this approach, I provide ∅ have with a semantics based on Sæbø’s (2009) semantics for (overt) have: on this approach, the semantic contribution of ∅ have is minimal — it introduces an argument by turning a small clause into a predicate, without providing a semantic role for the argument — and additional shades of meaning that come to be associated with have (notably, possession) are provided by silent predicates. As we will see, such an approach allows for a uniform semantics for ∅ have across sentences like John wants ∅ have [DP an apple] and John wants ∅ have [vP Bill to eat an apple]. I furthermore test and lend support for Harley’s (2004) view that ∅ have is the abstract root at the base of both have and get by showing that the complement types available to ∅ have closely track the complement types available to have/get except in cases where the latter forms take on additional shades of meaning (notably obligation in the
case of have and becoming in the case of get) which are not available to their silent counterpart. Finally, I provide syntactic evidence that EC predicates other than want (and, as we will see, need) cannot embed $\emptyset_{\text{have}}$, and I argue that this is because only want (and need) have the right semantics to combine with it. In particular, because the semantic contribution of $\emptyset_{\text{have}}$ is minimal, the burden is on the higher inflectional head to assign a semantic role to the argument it introduces. Because want denotes an attitude toward a proposition, it assigns the role of attitude-holder to the argument introduced by $\emptyset_{\text{have}}$. Among the other EC verbs, on the other hand, some (namely the aspectual verbs and the root modals) do not assign any semantic role to the subject, and hence the argument introduced by $\emptyset_{\text{have}}$ cannot be properly integrated into the meaning of the sentence. (As will be discussed below, it runs afoul of what Sæbø (2009) calls the ‘Pertinence criterion’.) Others (namely try and implicative verbs like manage) are hybrid aspect/attitude verbs that require that the attitude holder be part of the core event and hence also result in semantic anomaly when used with $\emptyset_{\text{have}}$. Crosslinguistic data from Ozark English and Greek, however, will show that some languages have strategies for overriding the ban on $\emptyset_{\text{have}}$ with hybrid aspect/attitude verbs; this matter is taken up again in chapter 6, section 6.7.

The proposals in this chapter have a theoretical significance that extend beyond their functional role in the dissertation. In particular, this chapter unifies three as yet unconnected lines of research in previous literature: (1) Harley’s (2004) proposal that $\emptyset_{\text{have}}$ (i.e., the silent verb embedded by want) is the abstract root that gives rise to overt counterparts have and get, (2) Cinque’s (2006) suggestion that $\emptyset_{\text{have}}$ may embed a verbal projection as well as a DP, and (3) Sæbø’s (2009) proposal that the semantic contribution of have is minimal in that its sole function is to turn a small clause into a predicate. As we will see, these proposals reinforce each other, and when taken together, provide us with a better understanding of how the distribution and interpretation of have relates to the various kinds of complement types available to want and how they are interpreted.

The organization of the rest of this chapter is as follows. Section 2 sketches the basics of the proposal, demonstrates how it accounts for the mixed properties of want, and provides some initial
support for it by showing that it makes accurate predictions about the interaction between overt restructuring effects and the availability of partial control in Italian. Section 3 reviews Sæbo’s (2009) semantics for have, extends the proposal to $\emptyset_{\text{have}}$, and provides explicit semantic derivations for John wants $\emptyset_{\text{have}} [\text{DP an apple}]$ and John wants $\emptyset_{\text{have}} [\text{vP Bill to eat an apple}]$. The next two sections are devoted to the distribution of $\emptyset_{\text{have}}$: section 4 is concerned with the internal syntax of $\emptyset_{\text{have}}$ phrases, investigating the possible values for $XP$ in the syntactic contexts want to have $XP$, want to get $XP$, and want $\emptyset_{\text{have}} X P$. Section 5 turns to the external syntax of $\emptyset_{\text{have}}$ phrases, first providing syntactic evidence for the claim that want and need are unique among restructuring verbs in being able to embed $\emptyset_{\text{have}}$, and then explaining this distribution by appealing to the crucial semantic property that sets want and need apart from other restructuring verbs. Section 6 addresses a couple of remaining syntactic questions about want regarding Case assignment and passivization. Section 7 concludes.

3.2 The cryptoclusal solution

Cinque (2006), although not concerned with the mixed properties of want that are the topic of this chapter, does in connection with another concern make a proposal regarding Italian volere ‘want’ that suggests a solution to our puzzle. In particular, Cinque is concerned with how his functional head approach to restructuring verbs can be reconciled with the apparent lexical use of (the Italian equivalent of) want as exemplified in (5). If want is always an inflectional head and unable to introduce arguments, then (5) should be ill-formed for not containing a main verb and having two arguments without semantic roles. As a solution, Cinque suggests that (as argued independently by Ross (1976); McCawley (1979); den Dikken et al. (1996); cf. also Fodor & Lepore 1998; Harley 2004) apparent DP complements to want actually involve a silent verb $\emptyset_{\text{have}}$. On this view, the main verb in the sentence is $\emptyset_{\text{have}}$, and it is responsible for introducing both arguments.

(5)  
   a. John wants an apple.
   b. John wants [$\emptyset_{\text{have}}$ an apple].
In an endnote, Cinque credits Dominique Sportiche with the suggestion that (granting some flexibility in the kinds of complements ∅ may take) we can analyze sentences like (the Italian equivalent of) (6a) as in (6b).¹

(6) a. John wants Mary to stay.
   b. John wants \[VP ∅ have [vP Mary to stay]]

As Cinque then observes, this leads to the prediction that sentences like (7a) — in which the complement to want does not include an overt subject — are ambiguous between a simple restructuring sentence as in (7b) and the more complicated biclausal structure in (7c).

(7) a. John wants to stay.
   b. John wants [VP to stay]
   c. John wants [VP ∅ have [vP PRO to stay]]

Finally, Cinque argues that this predicted structural ambiguity for sentences like (7a) is in fact desirable: it explains why in Italian, volere ‘want’ is unique among restructuring verbs in supporting double use of adverbs like già ‘already’ just in case no overt restructuring effects obtain. In (8a), for example, no overt restructuring effects obtain, and già may appear twice. In (8b), on the other hand, clitic climbing evidences restructuring and the double use of già is concomitantly not permitted.

¹ I depart here somewhat from Cinque’s suggestion in analyzing the complement to ∅ have as a vP rather than a CP. There are several reasons for this change. First, on the view that vPs are properties of eventualities whereas CPs are propositions, analyzing the complement to ∅ have as a vP will be more in harmony with Sæbo’s (2009) semantics for have as reviewed in the next section. Second, in restructuring contexts (i.e., contexts without ∅ have), the complement to want is also a vP, and so by analyzing complements to ∅ have in this way as well, we will be able to maintain a uniform semantics for want across all contexts (uniform in that it always takes a vP/type ⟨ε, st⟩ complement). It may be objected that the vP analysis will not work for languages like Italian where a subjunctive complement to volere ‘want’ is preceded by an overt complementizer che. However, Greek data suggest that apparent ‘complementizers’ are not always true complementizers; Greek na, for example, precedes embedded clauses even in cases where on the present analysis, the embedded clause would be analyzed as a vP. See Chapter 6 for more on Greek.
This state of affairs for *volere* is contrasted with other restructuring verbs like *dovere* ‘must’ and *cominciare* ‘begin’, which disallow double use of *già* even in the absence of overt restructuring effects, as shown in (9).

(8) a. Maria vorrebbe *già* averlo *già* lasciato.
   ‘Mary would already want to have already left him.’
   
   b. *Maria lo vorrebbe *già* aver *già* lasciato. (Cinque 2006:17)

(9) a. *Maria deve *già* averlo *già* lasciato.
   ‘Maria already must have already left him.’
   
   b. *Maria comincia *già* ad esserci *già* antipatica.
   ‘Maria already begins to already be unpleasant’ (Cinque 2006:61)

As suggested by Cinque, we can explain the asymmetry between (8a) and (8b) and the asymmetry between (8) and (9) with the following reasoning. We begin with the reasonable assumption that *già* and other similarly behaving adverbs are restricted to appearing at most once per clause. We combine this with Cinque’s proposal that restructuring verbs like *volere* ‘want’, *dovere* ‘must’ and *cominciare* ‘begin’ always instantiate monoclausal structures even in the absence of overt restructuring effects. We thereby predict that all four sentences in (8)–(9) should be ungrammatical. But then we propose that *volere* is special among restructuring verbs in being able to conceal a main verb $\emptyset_{\text{have}}$ that can itself embed a clause. Thus there is a parsing of (8a) that is biclausal and we correctly predict that the double use of *già* is grammatical here. However, when an overt restructuring effect such as clitic climbing takes place, the biclausal structure is filtered out as a possible parsing since overt indicators of restructuring are contingent on monoclausality. Hence (8b) is ungrammatical.

By parity of reasoning, this account makes another prediction not explicitly recognized by Cinque: *want* should be special among restructuring verbs in being able to support partial con-
control, but only if no overt restructuring effects obtain. The reason for this is that just like the double use of già, partial control is contingent on biclausality (since it requires an embedded clause with a PRO subject). The following data from Italian, due to Landau (2000), suggest that this prediction is correct. (10a) establishes that (at least for some speakers, Landau claims) preferire supports clitic climbing: the reflexive clitic si functioning as the object of the lower verb may appear in front of a finite form of preferire. (10b–c) illustrate that in a partial control environment (here induced by the inherently collective predicate incontrarsi ‘to meet each other’), preferire is grammatical, but only if clitic climbing does not take place.

(10)  
(a) Gianni ha detto a Maria che si preferiva lavare di mattina.  
John has told to Mary that self preferred wash in morning  
‘John told Mary that he preferred to wash in the morning.’

(b) Gianni ha detto a Maria che preferiva incontrarsi di mattina.  
John has told to Mary that preferred meet-self in morning  
‘John has told Mary that he preferred to meet in the morning.’

(c) *Gianni ha detto a Maria che si preferiva incontrare di mattina.  
John has told to Mary that self preferred meet in morning  
‘John has told Mary that he preferred to meet in the morning.’ (Landau 2000:80)

The above example uses preferire ‘prefer’, but the expectation is that this patterning should carry over to volere ‘want’ as well. According to my informant, it is indeed the case that (11a) (without clitic climbing) is more acceptable than (11b) (with clitic climbing), although the difference may be slight:

(11)  
(a) Gianni ha detto a Maria che voleva incontrarsi alle 5.  
John has told to Mary that wanted meet-self at 5  
‘John told Mary that he wanted to meet at 5.’

(b) *Gianni ha detto a Maria che si voleva incontrare alle 5.  
John has told to Mary that self wanted meet at 5  
‘John told Mary that he wanted to meet at 5.’
The basics of the proposal are now in place. In summary, the proposal is that want is a functional head in the inflectional layer of the clause and hence should be a restructuring verb. Unlike typical restructuring verbs, however, it is able to project over a silent main verb $\emptyset_{\text{have}}$. Via $\emptyset_{\text{have}}$ and the resulting biclausality, it is able to simulate two important properties of PC verbs that are contingent on biclausality: the availability of an overt embedded subject and the availability of partial control. As preliminary support for this approach, want has been independently argued to occur with $\emptyset_{\text{have}}$ by scholars concerned with the interpretation of DP complements to want, and we have also seen that this approach makes accurate predictions about the distribution of Italian adverb già ‘already’ and about the relationship between partial control and clitic climbing with Italian preferire and volere.

In order to fully substantiate this approach, however, we need to work out the details of three important questions:

(12)  
\begin{enumerate}
\item \textbf{Interpretation:} What is the semantic contribution of $\emptyset_{\text{have}}$, and how (if at all) does it differ from that of $\emptyset_{\text{have}}$’s overt counterpart have?
\item \textbf{Internal distribution:} What kinds of complements can $\emptyset_{\text{have}}$ combine with other than DPs and vPs? How does this compare with have?
\item \textbf{External distribution:} Is want unique among restructuring verbs in being able to embed $\emptyset_{\text{have}}$, and if so, why?
\end{enumerate}

The next three sections address these three questions respectively. I argue that the proposed analysis withstands the scrutiny of these three questions and that answering these questions properly lends further support to the analysis, insofar as it leads to accurate predictions about the distribution and interpretation of various kinds of complements to want and other restructuring verbs.

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3.3 The semantics of $\emptyset_{\text{have}}$

This section proposes a semantics for $\emptyset_{\text{have}}$ as used in combination with want. First I review Sæbø’s approach to have and then extend this approach to $\emptyset_{\text{have}}$.

3.3.1 Sæbø 2009: have as abstractor

Sæbø (2009) observes, building on earlier data and analysis (see especially Landman & Partee 1987; Iatridou 1996; Jensen & Vikner 1996; Partee 1999; Landman 2004; de Acosta 2006), that have appears in at least three distinct syntactic-semantic contexts. Among the two better studied contexts are the so-called disposal have which Sæbø paraphrases as “have at one’s disposal” and illustrates with the examples in (13), and the so-called existential have as illustrated in (14) whereby the subject appears to saturate the internal argument of a relational noun in the predicate and have serves merely as a “bridge”. Less well studied — and central in Sæbø’s investigation — are contexts in which have is followed by a small clause (i.e., a subject plus a nonfinite predicate), as in the examples in (15).

(13) DISPOSAL have

a. The vinyl shop has all the latest releases on vinyl.

b. My father has the farm next to the pub.

c. East has the Queen of Hearts.  (369)

(14) EXISTENTIAL have

a. The crime had two victims.

b. America has enough enemies as it is.

c. You have a rich daddy and a good-lookin’ mama.  (370)

(15) SMALL CLAUSE have

a. The beetle had the engine in the rear.

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b. She has all four grandparents alive.

c. Shrek has a donkey for a friend.

In connection with this third use of *have*, Sæbø articulates two puzzles associated with its analysis. First, the *pertinence problem* relates to the observation that *have* must bind a (sometimes implicit) variable in the small clause. For example, Sæbø observes that there are two salient ways of making sense of the sentence in (16a): in a ‘spymaster’ context, the sentence is paraphrasable as *I have a spy of mine aboard*; in a ‘shipmaster’ context, the sentence is paraphrasable as *I have a spy aboard my ship*. In both cases, the subject binds some implicit variable in the small clause. When there is no way of understanding such a variable to be part of the small clause, the sentence is infelicitous, as in the example in (16b).

(16) a. I have a spy aboard.

b. #We had the weather overcast.

Second, the *redundancy problem* relates to the observation that aside from binding a variable in the small clause, the subject and *have* seem to play no independent semantic role in the sentence. Sæbø illustrates this with the following sentences: (17a) is paraphrasable as *All her grandparents are alive* and (17b) is paraphrasable as *A gun was pointing at me*. In each case, the matrix subject and verb seem to add nothing to the interpretation.

(17) a. She has all her grandparents alive.

b. I had a gun pointing at me.

Sæbø proceeds to develop a semantics for *small clause have* in a way that makes sense of the *pertinence problem* and the *redundancy problem*, and then shows how this analysis can be extended to account for *existential have* and *disposal have* as well. In a nutshell, Sæbø’s proposal has two ingredients. First, the semantic function of *have* is to take a set of states and return a function from individuals to sets of states, as in (18). Second, the subject in a *have*-sentence obligatorily
undergoes QR, which on Sæbø’s implementation results in the introduction of the variable binder in (19). (See Büring 2004, and also chapter 2 above, which makes use of similar machinery, albeit with the difference that Sæbø achieves pronoun binding via QR, à la Heim & Kratzer 1998, whereas Büring achieves pronoun binding via $\beta$-insertion, which is not contingent on movement. As far as I can tell, this difference is not crucial to the cases at hand).

(18) $[[\text{have}]] = \lambda\phi_{(st)}\lambda x \phi$

(19) $[[\mu_i]] f = \lambda \phi \lambda z \phi f[i\rightarrow z]$

The results are straightforward for cases where the subject binds an overt variable in the small clause, as in (20).

(20) Most cars have their engine in the front.

(20) has a syntax like (21), and the interpretation proceeds from bottom to top as in (22).

(21)

```
most cars
  \mu_3
  t_3
  have
  their_3 engine in the front
```

(22) a. $[[\text{their}_3 \text{ engine in the front}]] = \lambda s \text{ in the front}(\text{engine}(f(3)))(s)$
b. $[[\text{have their}_3 \text{ engine in the front}]] = \lambda x \lambda s \text{ in the front}(\text{engine}(f(3)))(s)$
c. $[[t_3 \text{ have their}_3 \text{ engine in the front}]] = \lambda s \text{ in the front}(\text{engine}(f(3)))(s)$
d. $[[\mu_3 t_3 \text{ have their}_3 \text{ engine in the front}]] = \lambda z \lambda s \text{ in the front}(\text{engine}(z))(s)$
e. $[[\text{most cars } \mu_3 \text{ t}_3 \text{ have their}_3 \text{ engine in the front}]]$

$$= \lambda s(\text{most cars})(\lambda z \text{ in the front}(\text{engine}(z))(s))$$

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On this approach, the answer to the *redundancy problem* is that the semantic function of *have* is to introduce into the structure the argument named by the subject. As for the *pertinence problem*, the upshot of the proposed analysis is that if the subject does not bind a variable in the small clause, then neither it nor *have* play any role in the interpretation, which Sæbø suggests results in infelicity due to a general principle of economy (‘avoid redundancy’). (See also Ritter & Rosen 1997 for an earlier manifestation of the idea that the function of *have* is simply to introduce an argument, without providing a thematic role for it.)

By positing implicit variables where appropriate, this approach can then be extended to instances of *small clause* *have* that lack an overt anaphor, as in (23a). By positing implicit predicates, the approach also extends to instances of *existential* *have* and *disposal* *have* as in (23b–c) respectively.

(23)  
   a. Most cars have the engine in the front.  
   b. You have a good-lookin’ mama.  
   c. My mama has a boat.

For cases like (23a), Sæbø proposes that *engine* is interpreted as a relational noun with an implicit anaphor bound by the subject, thus making it parallel with the above case where the anaphor is supplied overtly. For cases like (23b), Sæbø proposes that *mama*, as a relational noun, likewise occurs with an implicit anaphor bound by the subject, and that furthermore the entire DP *a good lookin’ mama* occurs with an implicit predicate of existence, thus making *existential* *have* syntactically and semantically parallel to *small clause* *have*. Finally, for cases like (23c) involving *disposal have*, Sæbø again posits an implicit predicate, this time of possession, so that *a boat* is interpreted as *a boat belonging to her*, where *her* is a variable bound by the subject. This is illustrated in (24)–(25).
In this way, we have a unified semantics for all the uses of *have* under investigation: whether explicitly or implicitly, the felicitous use of *have* always involves combination with a small clause containing a variable bound by the argument that *have* introduces.

### 3.3.2 Extending the approach to $\emptyset_{\textit{have}}$

In this subsection, we will see that Sæbo’s denotation for *have* extends straightforwardly to $\emptyset_{\textit{have}}$ to predict the right semantics for both of the following kinds of sentences:

\[
\begin{align*}
\text{(26) a. } & \text{ John wants } \emptyset_{\textit{have}} \text{[an apple].} \\
\text{b. } & \text{ John wants } \emptyset_{\textit{have}} \text{[Bill to go].}
\end{align*}
\]

I begin with some syntactic preliminaries. Following Cinque (2006), I take the crosslinguistically robust restructuring status of *want* as decisive in classifying *want* as a functional head in the inflectional layer of the clause. This proposal has the consequence that the complement to *want* must always be a VP (or vP) whose subject raises over *want*, and apparent exceptions to this as in (26a–b) are explained away by positing a silent verb $\emptyset_{\textit{have}}$ that heads the overt complement to *want.*
Prior to raising, the preliminary proposed structure for (26b) is as in (27).

(27)

\[
\begin{array}{c}
F \\
\mid \text{want} \\
\end{array}
\begin{array}{c}
\text{VP} \\
\mid \text{John} \\
\end{array}
\begin{array}{c}
V' \\
\mid V \\
\mid \phi_{have} \\
\end{array}
\begin{array}{c}
vP \\
\mid \text{Bill to go} \\
\end{array}
\]

Although want is syntactically a raising predicate, its subject gets linked to the semantic role of attitude holder that want requires. Recalling the mechanism argued for in chapter 2, I will assume that this is achieved because want contains as part of its meaning a dependent variable \(\phi_{self_n}\) semantically linked to the role of attitude holder. When the subject raises, it becomes the closest c-commanding argument and hence binds this variable via \(\beta\) insertion, as illustrated in (28).

(28)

\[
\begin{array}{c}
\text{TP} \\
\mid \text{DP} \\
\mid \text{John} \\
\mid \beta_2 \\
\mid \mu_3 \\
\end{array}
\begin{array}{c}
\text{T'} \\
\mid \text{T} \\
\mid \text{FP} \\
\mid F \\
\mid \text{VP} \\
\mid \text{V'} \\
\mid V \\
\mid \phi_{have} \\
\end{array}
\begin{array}{c}
vP \\
\mid \text{Bill to go} \\
\end{array}
\]

We now turn to the semantics of this structure. As a null hypothesis, I assume as in (29) that \(\phi_{have}\) has the same semantics as have as proposed by Sæbø (2009). (Such an assumption will suit us fine for this section, though see the next section for a few qualifications.) I depart slightly from Sæbø here in that I use \(\epsilon\) rather than \(s\) since I am using an event semantics rather than a situation.
semantics, and I also include \( s \) (which here stands for the type of worlds) since we will be looking at intensional contexts.

\[
[[\text{have}]] = [[\emptyset_{\text{have}}]] = \lambda\phi(\epsilon, st) \lambda x \phi
\]

The interpretation of the VP in (28), from bottom to top, proceeds as follows.

\[
\begin{align*}
(30) \quad a. \quad &[[\text{Bill to go}]] = \lambda e \lambda w. \text{Bill-goes}(e, w) \\
b. \quad &[[\emptyset_{\text{have}} \text{ Bill to go}]] = \lambda x \lambda e \lambda w. \text{Bill-goes}(e, w) \\
c. \quad &[[t_3 \emptyset_{\text{have}} \text{ Bill to go}]] = \lambda e \lambda w. \text{Bill-goes}(e, w)
\end{align*}
\]

What is important here is that, following Sæbø’s approach, the denotation of the VP is the same as that of the VP below it: \( \emptyset_{\text{have}} \) and the argument it introduces play no role in the complement to \( \text{want} \); rather, all \( \emptyset_{\text{have}} \) does is introduce an argument that will raise and bind the attitude-holder variable that is part of the semantics of \( \text{want} \). Thus we do not run afoul of Sæbø’s pertinence criterion: although the argument introduced by \( \emptyset_{\text{have}} \) does not bind a variable in the complement to \( \emptyset_{\text{have}} \), it does end up binding a variable higher in the structure and thus satisfies whatever economy condition rules out sentences like \( \text{We had the weather overcast} \).

The next thing to consider is the semantics for \( \text{want} \). As a useful starting point, let us take the semantics proposed by Hacquard (2008), whose formulation is based on von Fintel 1999, building on important insights in Stalnaker 1984; Heim 1992 (see also Giorgi & Pianesi 1997; Portner 1997; Giannakidou 1999; Villalta 2008):

\[
[[\text{want}]] = \lambda p_{(st)} \lambda e. \text{want}(e) \land \forall w' \in \text{BEST}_{\text{desire}}(\text{DOX}(x, \tau(e), w)): p(w')
\]

Like other verbs, Hacquard treats \( \text{want} \) as a predicate of events so that it can combine with tense and aspect. DOX is a function that takes as its arguments an individual (the attitude holder, which for Hacquard is introduced later via a voice head), a time (the time of the wanting event), and a world (the evaluation world) and returns the set of worlds compatible with the individuals beliefs.
at the wanting time in the evaluation world. *want*-sentences are true just in case there is a wanting event such that all the worlds returned by DOX that are the most desirable worlds for the individual in question (those in $\text{BEST}_{\text{desire}}$) are worlds in which the proposition named by the complement to *want* are true.

In order to reconcile Hacquard’s semantics for *want* with the syntactic and semantic assumptions I am making, two modifications are needed. First, rather than treating the attitude holder as being introduced by a voice head, we need to represent it as an incorporated reflexive pronoun, in order to bring it line with the approach to subject orientation argued for in chapter 2. Second, rather than treating the complement to *want* as a proposition (type $\langle st \rangle$), I will treat it as a property of events (type $\langle e, st \rangle$). This is to reflect the fact that on the current approach, the complement to *want* is a vP. Accordingly, I assume that *want* existentially quantifies over this event position. This gives us the following modified denotation for *want*:

$$[[\text{want-}\emptyset_{\text{self}_{n}}]]^{g} = \lambda P_{\langle \epsilon, st \rangle} \lambda e . \text{want}(e) \land \forall w' \in \text{BEST}_{\text{desire}}(\text{DOX}(g(n), \tau(e), w)) : \exists e' P(w')(e')$$

After *want* is supplied with its first argument, the result is a predicate of events, as in (33).

$$[[\text{want-}\emptyset_{\text{self}_{2}} t_{3} \emptyset_{\text{have Bill to go}}]]^{g} = \lambda e . \text{want}(e) \land \forall w' \in \text{BEST}_{\text{desire}}(\text{DOX}(g(2), \tau(e), w)) : \exists e' \text{ Bill-goes}(w')(e')$$

Assuming for concreteness that the function of Tense is to existentially bind the event variable and impose restrictions on the runtime of the event, combination with Tense gives us back the following formula:

$$[[\text{T want-}\emptyset_{\text{self}_{2}} t_{3} \emptyset_{\text{have Bill to go}}]]^{g} = \exists e \tau(e) < t^{*} \land \text{want}(e) \land \forall w' \in \text{BEST}_{\text{desire}}(\text{DOX}(g(2), \tau(e), w)) : \exists e' \text{ Bill-goes}(w')(e')$$
In the final stage, the raised subject is plugged back in, replacing all variables with the appropriate index, crucially in this case the variable corresponding to the attitude holder:

\[(35) \quad [[\text{John} \beta_2 \mu_3 \text{T want-} \emptyset_{\text{self}2} \ t_3 \ \emptyset_{\text{have}} \ \text{Bill to go}]] = \]
\[\exists e \tau(e) < t^* \land \text{want}(e) \land \forall w' \in \text{BEST}_{\text{desire}}(\text{DOX(John,} \tau(e),w)) : \exists e' \text{ Bill-goes}(w')(e')\]

In prose: ‘There was some wanting event prior to speech time such that in all the most desirable worlds in John’s doxastic alternatives in this world at the time of wanting, there is an event of Bill going.’

The extension of this analysis to apparent DP complements to want is more or less straightforward, as long as we adopt Sæbø’s suggestion that have on its possessive use involves an implicit predicate like belonging to x. Thus the structure for John wants an apple is as in (37).²

\[(36) \quad (\text{TP}) \]
\[\quad (\text{DP}) \quad (\beta_2) \quad (\mu_3) \quad (\text{T'}) \]
\[\quad (\text{T}) \quad (\text{FP}) \]
\[\quad (\text{F}) \quad (\text{VP}) \]
\[\quad (\text{want-} \emptyset_{\text{self}2} \ t_3) \quad (\text{V'}) \]
\[\quad (\text{V}) \quad (\text{SC}) \]
\[\quad (\emptyset_{\text{have}}) \quad (\text{DP}) \quad (\text{PP}) \]
\[\quad (\text{an apple}) \quad (\text{belonging to him}_2) \]

² I use ‘SC’ in this tree as a shorthand for ‘small clause’ to remain neutral about the syntactic category of the complement to \(\emptyset_{\text{have}}\). What is important here is that it denotes a property of events.
Semantic computation proceeds as it did for the previous example, with the resulting truth conditions being ‘there was some wanting event prior to speech time such that in all the most desirable worlds in John’s doxastic alternatives in this world at the time of wanting, there is an apple belonging to John.’

It is also worth pointing out that because the subject binds the attitude holder position associated with want in the structure in (36), thereby rendering itself non-redundant, there is actually no need to assume that the silent predicate combining with an apple also contains a variable bound by the subject. This opens up the possibility that the silent predicate could denote something as simple as existential closure, so that John wants an apple is paraphrasable as John wants there to be an apple. This seems like a welcome result, given the felicity of examples like John wants (there to be) a spaceship on Pluto (by 2015), which are most easily interpreted without any hint of possession but rather as a relationship between an individual (John) and a proposition that does not make reference back to the individual in any way (there being a spaceship on Pluto (by 2015)).

3.4 The distribution of $\emptyset{have}$, pt. 1: $\emptyset{have}$ P-internal

Having presented the basics of the cryptoclausal solution and having sketched a semantics for $\emptyset{have}$, the purpose of this section and the next is to further substantiate the proposal through a detailed investigation of the distribution of $\emptyset{have}$. This section is concerned with the kinds of complements $\emptyset{have}$ may take (i.e., the internal distribution of $\emptyset{have}$Ps), and the next section is concerned with understanding which predicates aside from want may embed $\emptyset{have}$ and why (i.e., the external distribution of $\emptyset{have}$Ps).

3.4.1 The syntax of “want DP”: History and state of the art

Before beginning our distributional investigation, it will be useful to briefly survey the history and state of the art of the cryptoclausal analysis of want DP. The idea that phrases like want an apple contain hidden clausal structure dates back to proposals by Ross (1976) and McCawley (1979)
working in the Generative Semantics framework. For them, evidence for such a structure was primarily semantic rather than syntactic. In particular, two of the strongest arguments adduced by these authors for null clausal structure are the fact that want-DP sentences admit two temporal frames, as shown in (37a), and exhibit referential opacity with respect to the object DP, as shown in (37b).

(37)  
   a. **A week ago** Bill wanted your car **yesterday**. (McCawley 1979:85)
   b. Bill wanted a car, **but there were no cars**.

In (37a), *a week ago* refers to the time of Bill’s wanting (the psychological attitude), whereas *yesterday* refers to the time of the wanted state of affairs (namely, possession of the car). In (37b), the non-contradictory status of the bolded material indicates that the object of *want* need not exist in the actual world. On the view that temporality and referential opacity are properties exclusively of clauses, the sentences in (37) lend support for a null clausal structure in the complement to *want*: it is crucially something like ∅*have* that has the temporal properties to support a time adverbial like *yesterday* and that has the modal properties to support referential opacity.

In a related vein, Karttunen (1976), in his seminal study of discourse referents, observes that there is a special class of verbs including *want* and the others in (38) which pattern unlike garden-variety verbs like those in (39) in that indefinite objects do not establish a discourse referent in simple positive assertions. In each of the examples in (38), the second sentence is infelicitous (unless the indefinite in the first sentence is interpreted specifically rather than nonspecifically).

(38)  
   a. I needed **a car**. *It was a Mustang.*
   b. Seymour wants **a knife**. *It is sharp.*
   c. John promised Mary **a bracelet**. *The bracelet was very expensive.*
   d. The casting director was looking for **an innocent blonde**. *She was from Bean Blossom, Indiana.*
(39)  
   a. I owned a car. It was a Mustang.  
   b. Seymour imagines a knife. It is sharp.  
   c. John bought Mary a bracelet. The bracelet was very expensive.  
   d. The casting director was looking at an innocent blonde. She was from Bean Blossom, Indiana. (Karttunen 1976:10)

For Karttunen, two considerations support the idea that the superficial nominal objects in (38) may have null clausal structure. First, failure of a non-specific indefinite NP to introduce a discourse referent ordinarily happens when the proposition it is embedded in is not asserted, implied or presupposed by the speaker. Appealing to null clausal structure in (38) allows us to tie the discourse-referent facts to a hidden proposition. Second, Karttunen says that “most if not all” of the relevant verbs admit overt clausal complements, as in (40).

(40)  
   a. Seymour wanted to have a knife.  
   b. I propose that you eat a bagel.  
   c. John promised to give Mary a bracelet.  
   d. Mary expects John to buy her a bracelet. (Karttunen 1976:11)

However, potentially problematic for this idea is that some predicates such as look (for) pattern with want with respect to discourse referents yet do not admit overt clausal material in their complement:

(41)  
   a. John looked for a knife. *It was sharp.  
   b. ??John looked (for) to find/have/get a knife.

Furthermore, there is also a longstanding tradition in formal semantics for seeking to capture the opacity of complements to ‘intensional transitive verbs’ without appealing to null clausal structure: on one view (Montague 1973, building on earlier work by Quine (1956); see also Partee 1974; Moltmann 1997), noun phrases can themselves act as intensional quantifiers without clausal material, and on another view (Zimmerman, 1993) opaque NP complements denote properties of
individuals.

The temporal interpretation facts, however, may provide stronger evidence for null clausal structure. Although much work in formal semantics has shown that noun phrases are temporally interpreted in a way not dependent on clausal structure (see e.g. Enç 1986; Musan 1995, 1999; Tonhauser 2007), there still needs to be some way of explaining why only certain apparently simple transitive verbs admit two distinct time frames. And in this case, the evidence suggests that there is a correlation to whether or not the verb admits overt clausal complements: thus want, need and promise all admit two time frames but look (for) does not:

(42)  a. A week ago, Bill wanted your car yesterday.
    b. A week ago Bill needed your car yesterday.
    c. A week ago, Bill promised Mary a bracelet yesterday.
    d. *A week ago, Bill looked for an innocent blonde yesterday.

But ultimately, the presence of null clausal structure in DP complements to want should be based on syntactic (distributional) as well as semantic evidence. This brings us to Fodor & Lepore (1998); Harley (2004).

3. See also den Dikken et al. (1996), who motivate a hidden clausal approach to ‘want DP’ on the grounds that although it may be possible to build an intensional semantics for DPs, the hidden clause approach renders such an extension ‘unnecessary’. The worry in this appeal to non-necessity, though, is that in simplifying one area of the grammar (intensionality is always contingent on clausality) we complicate another area (verbs can be either overt or under some conditions covert).

4. Another interesting kind of evidence that might be used is typological: given that many languages use strategies other than a transitive verb meaning have to express possession, we might expect those languages to correspondingly not license ‘want DP’. This question is explored by Harves (2008), who shows that although not all languages allow ‘want DP’, there is no correlation between this parameter and how a given language expresses possession. Interestingly, however, Harves (2008) also shows for Indo-European that there is a positive one-way correlation from expressing possession via be + genitive case marking rather than have to disallowing ‘need DP’ (need being another ‘intensional transitive verb’ often considered together with want; see also section 3.5.2 below.) Harves & Kayne (2012) show that the generalization regarding need extends to non-Indo-European languages as well.
Fodor & Lepore (1998), in a response paper to Pustejovsky 1995, observe following Pustejovsky that the existence of two subcategorization frames for *want* (one with a DP complement as in (43a) and one with an infinitival complement as in (43b)) leaves us with a choice point in the analysis of the semantics of *want* and its composition with its complement.

(43) a. John wants a beer.
   b. John wants to drink a beer.

One option that both Pustejovsky and Fodor & Lepore find unsatisfactory is to say that there are two lexical entries for *want* that differ in meaning and in subcategorization. Like Pustejovsky, Fodor and Lepore maintain that *want* has just one lexical entry whose semantics is straightforwardly equipped to handle cases like (43b), and that something special therefore must happen in cases like (43a). Here, Fodor and Lepore part from Pustejovsky. For Pustejovsky, the interpretation of sentences like (43a) involves a coercion mechanism whereby information recoverable from the meaning of the noun supplies the right kind of meaning for the sentence. *want a beer*, for example, is interpreted as *want to drink a beer*, whereas *want a cigarette* is interpreted as *want to smoke a cigarette*. Fodor and Lepore, in contrast, contend that the semantic composition in (43a) is blind to such specific properties of the noun: whenever *want* combines with a DP, the interpretation is *want to have DP*.

Harley (2004) points out that for a great deal of cases, Fodor and Lepore’s proposal works remarkably well. For one thing, the meaning of *want DP* tracks the meaning of *want to have DP* even as the nature of the DP imposes different nuances on the kind of possession relation involved. Thus both (44a) and (45a) are most naturally construed as being about permanent ownership whereas (44b) and (45b) are most naturally construed as being about temporary ownership. In the (c) examples, *daughter* brings out a ‘parenting’ interpretation, and in the (d) examples, the most natural interpretation is a sexual one. (See, however, Wechsler 2008 for trickier cases involving idioms that use *have*. )
(44) a. John wants a car.  
b. John wants the car.  
c. John wants a daughter.  
d. John wants Mary.  

(45) a. John wants to have a car.  
b. John wants to have the car.  
c. John wants to have a daughter.  
d. John wants to have Mary.  

Harley also cites work by McIntyre (ms., University of Leipzig; see also what was later published as McIntyre 2005) exposing an interesting parallel between want and have in their restrictions on verb-particle syntax. The observation is that in most verb-particle constructions, the particle can appear either to the left or to the right of the direct object, as shown in (46). However, have is special in not allowing the particle to appear to the left of the direct object, as shown in (47). Strikingly, as we see in (48), want exhibits the same restriction as have in this regard.

(46) a. He took his jacket off. / He took off his jacket.  
b. He took the splinter out. / He took out the splinter.

(47) a. He had his jacket off. /*He had off his jacket.  
b. The doctor had the splinter out in no time. /*The doctor had out the splinter in no time.

(48) a. The doctor wants those stitches out. /*The doctor wants out those stitches.  
b. The doctor wants those clothes off /*The doctor wants off those clothes. (Harley 2004:260)

The parallel between (47) and (48) is captured on the view that the sentences in (48) contain null counterparts of have.

However, Harley points out that Fodor and Lepore’s analysis faces difficulty in light of data like (49). As we see in (50), supplying have overtly in these sentences results in grammatical oddity. Rather, the right way to paraphrase the sentences in (49) seems to be with the verb get, as in (51).
(49)  a. John wants a compliment.
    b. John wants a pat on the back.
    c. John wants a kiss.

(50)  a. #John wants to have a compliment.
    b. #John wants to have a pat on the back.
    c. #John wants to have a kiss.

(51)  a. John wants to get a compliment.
    b. John wants to get a pat on the back.
    c. John wants to get a kiss.

To explain these facts, Harley proposes, following earlier work, that the verbs have and get decompose into an abstract preposition $P_{HAVE}$ plus a light verb be (in the case of have) or a light verb become (in the case of get). Harley then proposes that want embeds the abstract preposition $P_{HAVE}$, so that a VP like (52a) has the structure in (52b).

(52)  a. want a beer

\[\text{Diagram:}\]
\[
\text{VP} \quad \text{VP} \\
\text{V} \quad \text{PP} \\
want \quad \text{PRO} \quad \text{PP} \\
\text{P}_{HAVE} \quad \text{DP} \\
a \text{beer}\]

5. For Harley, one of the reasons for employing a preposition in the decompositional analysis of have is that in many languages, possession is expressed using a copula together with a preposition. Below, however, I will push the alternative view that this abstract element is verbal rather than prepositional.
Since $P_{HAVE}$ is at the root of both \textit{have} and \textit{get}, the expectation is that \textit{want DP} will sometimes be paraphrasable as \textit{want to have DP} and sometimes paraphrasable as \textit{want to get DP}.

As can be seen in section 3.3 above, my proposed syntax for ‘\textit{want DP}’ differs from Harley’s in a number of important ways. First, I employ a raising rather than a control analysis: whereas for Harley, the subject of \textit{want} is base-generated high and coreferential with an embedded PRO, on the analysis I am adopting, the subject is base-generated in the complement to \textit{want}. When it raises, it binds a variable which is part of the meaning of \textit{want}, thus simulating a control relation. Second, whereas for Harley, $\emptyset_{\text{have}}$ is a preposition, I take it to be a verbal head: it constitutes the main verb in the sentence. Third and finally, I follow Sæbø in supposing that the semantics of possession is encoded not in $\textit{have}/\emptyset_{\text{have}}$ itself but rather in an implicit predicate \textit{belonging to} $x$ where $x$ is bound by the subject introduced by $\emptyset_{\text{have}}$.

Despite these differences, the present analysis is still in principle compatible with the view that $\emptyset_{\text{have}}$ is at the abstract root of the overt counterparts \textit{have} and \textit{get}. The next two subsections test this hypothesis based on distributional data. The conclusion will be that although the distribution of $\textit{have}/\textit{get}$ is not exactly the same as that of $\emptyset_{\text{have}}$, the similarities are striking enough to support the view that \textit{want} embeds $\emptyset_{\text{have}}$ in a variety of sentence types, and those distributional differences that do obtain follow from a general principle according to which overt material may take on additional shades of meaning not available to their covert counterparts.

### 3.4.2 $\emptyset_{\text{have}}$ and clausal complements

In this subsection we look at clausal complements to \textit{want} and compare their distribution and interpretation to that of clausal complements to \textit{want to have} and \textit{want to get}.

(53) shows the relevant minimal pair for finite complements. As we see here, \textit{want} disallows finite complements, and so do (\textit{want to}) $\textit{have}/\textit{get}$. It was mentioned in the first chapter that \textit{want} is special among Landau’s PC verbs in disallowing finite complementation in English. Now, we have a principled explanation for this fact: \textit{want} is actually an EC verb and exhibits PC properties.
only in combination with $\emptyset_{have}$. But because $\emptyset_{have}$ disallows finite complements, as evidenced by the ungrammaticality of finite complements with the overt counterparts of $\emptyset_{have}$ (have and get), so does want.

(53)  
   a. *John wanted that Bill does/did/do it.
       
   b. *John wanted to have/get that Bill does/did/do it.

Next we turn to a somewhat more complicated array of facts having to do with small clause complements, i.e., complements that consist of a subject and a nonfinite predicate. (54) shows the facts for want; (55) shows the facts for want to have/get.

(54)  
   a. John wanted Bill available by 10am.  AP
   b. John wanted Bill off the team. PP
   c. John wanted Bill starting his work by 10am. GERP
   d. John wanted Bill relieved of his duties. PPRTP
   e. John wanted Bill to do all the work. INFP
   f. *John wanted Bill do all the work. BARE VP

(55)  
   a. John wanted to have/get Bill available by 10am. AP
   b. John wanted to have/get Bill off the team. PP
   c. John wanted to have/get Bill starting his work by 10am. GERP
   d. John wanted to have/get Bill relieved of his duties. PPRTP
   e. John wanted to have/get Bill to do all the work. INFP
   f. John wanted to have/*get Bill do all the work. BARE VP

Two observations are in order. First, the grammatical parallelism between (54) and (55) is striking, although there is one asymmetry seen in the (f) examples: want disallows small clause complements in which the predicate is headed by a bare verb form, whereas want to have does not. This is unexpected on the view that have and $\emptyset_{have}$ have the same distribution. However, another
observation suggests a potential solution: in particular, there is a systematic interpretational difference between (54) and (55). The sentences in (54) can all be characterized as relations between an attitude-holder and some state of affairs in which the attitude holder plays no role. In the sentences in (55), on the other hand, the attitude holder plays a peripheral role in the state of affairs as either a causer or a beneficiary. For example, *John wanted to get Bill off the team* on one interpretation is paraphrasable as *John wanted to cause Bill to be off the team*. To take another example, *John wanted to have Bill do all the work* is paraphrasable as *John wanted to benefit from Bill doing all the work*. This suggests that whereas $∅_{have}$ does not assign any particular semantic role to the argument it introduces, its overt counterpart *have* may do so. This is consistent with the fact that when *have* is used with a small clause complement by itself without *want*, an available interpretation is one in which the matrix subject is causer or beneficiary of the described event:

(56) John had/got Bill relieved of his duties.

Now we can come back to the distributional difference we noted: why is it that *have* but not $∅_{have}$ can combine with a small clause whose predicate is headed by a bare form verb? I suggest that this is because there is a semantic constraint on small clauses with bare form verbs. As is well known, two salient places where such small clauses are found are with causative predicates and perception predicates (see especially Higginbotham 1983):

(57) a. John made Bill do all the work.
   b. John watched Bill do all the work.

This suggests that bare verb small clauses are grammatical only when they are the object of causation or perception. In *want $∅_{have}$*, no causative (or perception) interpretation is available and so bare verb small clauses are ruled out, whereas in *want to have*, a causative interpretation is available and so bare verb small clauses are licensed.
3.4.3 $\emptyset_{have}$ and subjectless complements

Next we look at cases where the complement to $\emptyset_{have}$/have/get consists of a nonfinite predicate (without any overt subject). The relevant data are given in (58)–(59).

(58)  
<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>a. *John wanted drunk.</td>
<td>AP</td>
</tr>
<tr>
<td></td>
<td>b. John wanted off the team.</td>
<td>PP</td>
</tr>
<tr>
<td></td>
<td>c. *John wanted starting his work by 10am.</td>
<td>GERP</td>
</tr>
<tr>
<td></td>
<td>d. ??John wanted relieved of his duties.</td>
<td>PPRTP</td>
</tr>
<tr>
<td></td>
<td>e. John wanted to do all the work.</td>
<td>INF</td>
</tr>
</tbody>
</table>

(59)  
<p>| | | |</p>
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<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>a. John wanted to *have/get drunk.</td>
<td>AP</td>
</tr>
<tr>
<td></td>
<td>b. John wanted to *have/get off the team.</td>
<td>PP</td>
</tr>
<tr>
<td></td>
<td>c. John wanted to *have/*get starting his work by 10am.</td>
<td>GER</td>
</tr>
<tr>
<td></td>
<td>d. John wanted to *have/get relieved of his duties.</td>
<td>PPRT</td>
</tr>
<tr>
<td></td>
<td>e. John wanted to have/get to do all the work.</td>
<td>INF</td>
</tr>
</tbody>
</table>

Here, the distributional differences between $\emptyset_{have}$ and have/get are reducible to two asymmetries. The first asymmetry is in the acceptability of (58a)/(59b) and (58d)/(59d), which suggest that in cases where get takes on the meaning of become or be, $\emptyset_{have}$ is not an available paraphrase. (This leaves the grammaticality of (58b) somewhat unexpected. However, the grammaticality of want PP seems to be subject to some idiosyncratic restrictions (Wechsler, 2008): compare (58b) with *John wanted at home or *John wanted at peace with his surroundings.)

The second asymmetry is that although (58e) and (59e) are parallel in grammaticality, overt have in this syntactic environment takes on the meaning of an obligation modal whereas $\emptyset_{have}$ cannot do this.

Taken together, these two asymmetries suggest that although the distribution of $\emptyset_{have}$ tracks the distribution of have and get to a considerable degree, have and get may take on richer meanings...
not available to $\emptyset_{have}$.

3.5 The distribution of $\emptyset_{have}$, pt. 2: $\emptyset_{have}$ P-external

An important fact about VPs headed by $\emptyset_{have}$ is that they must be licensed in a particular way. They cannot be used without a supporting overt inflectional head like want, as (60) illustrates.

(60) *John $\emptyset_{have}$ a book.

A somewhat more nuanced illustration of this point comes from the following ellipsis data from Merchant (1999).

(61) a. Alex wants to have more toys than Ben does <want $x$-many toys / have $x$-many toys>.
   b. Alex wants $\emptyset_{have}$ more toys than Ben does <want $x$-many toys / *$\emptyset_{have}$ $x$-many toys>.

As we see in (61a), when the antecedent clause is want to have . . ., ellipsis may target either the entire VP headed by want, or the embedded VP headed by have. But as we see in (61b), when the antecedent clause is want $\emptyset_{have}$ . . ., only the entire VP is an available target for ellipsis. Presumably $\emptyset_{have}$ . . . is ruled out as a construal for the elided VP because $\emptyset_{have}$ is not locally supported by want.

Consequently, investigating the external distribution of $\emptyset_{have}$ phrases is a matter of figuring out the set of overt inflectional heads that support it. That is the task of this section.

---

6. The locality condition must, however, be loose enough to allow $\emptyset_{have}$ to be embedded in a conjunct in a coordinate complement to want, as in the coordination data in (i) and the pseudocleffting data in (ii).

(i) a. I want [them to clean out the apartment] and [a signed contract] by Friday.
   b. I want [a signed contract] and [for them to clean out the apartment] by Friday.

(ii) What I want for Christmas is [world peace] and [for everyone get along].

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3.5.1 Other desiderative predicates

Recall from chapter 2, section 2.4.4.3 that I argued for a split in the classification of desire predicates: *want* corresponds to \(\text{Mod}_{\text{volitional}}\) which sits below Tense, whereas other desiderative predicates like *wish* and *prefer* correspond to \(\text{Mood}_{\text{optative}}\) which sits above Tense.

\[
\begin{align*}
\text{(62)} & \quad \text{a. } \text{Mood}_{\text{optative}} > T > \text{Mod}_{\text{volitional}} \\
& \quad \text{b. } \text{want} \rightarrow \text{Mod}_{\text{volitional}} \\
& \quad \text{c. } \text{wish, prefer} \rightarrow \text{Mood}_{\text{optative}}
\end{align*}
\]

In light of the proposal from this chapter that *want* may simulate properties of PC predicates by embedding \(\emptyset_{\text{have}}\), we should ask: what if we were wrong about *wish* and *prefer*? How do we know that *want* may embed a complement with an overt subject only via \(\emptyset_{\text{have}}\) whereas *wish* and *prefer* embed CP complements without any special syntactic mechanism?

In particular, there are two crucial pieces of evidence for this state of affairs. First is the asymmetry with respect to restructuring. As illustrated in table 2.3 in chapter 2, section 2.4.4.3 above, *want* tends to restructure in many languages whereas *prefer* and *wish* do not. The other important piece of evidence is an asymmetry in the ability to embed finite complements in English. As reviewed above, *want* is unique among Landau’s PC verbs in disallowing finite complementation:

\[
\begin{align*}
\text{(63)} & \quad \text{a. } \text{John preferred (that) Bill come.} \\
& \quad \text{b. } \text{John wished (that) Bill would come.} \\
& \quad \text{c. } *\text{John wanted (that) Bill (would) come.}
\end{align*}
\]

On the present view, this asymmetry is straightforward: PC verbs are realized as lexical verbs that take CP complements. *want*, on the other hand, is a functional restructuring predicate which can embed clausal complements only via \(\emptyset_{\text{have}}\), which itself disallow finite complements.
3.5.2 EC predicates and $\emptyset_{\text{have}}$: the distributional facts

Assuming I am correct that want is an EC predicate that has the option of simulating PC properties by embedding $\emptyset_{\text{have}}$, we should ask: what about other EC predicates? Can any of them also embed $\emptyset_{\text{have}}$? Why or why not?

Let’s take (64) as a representative sampling of EC predicates.

(64)  
   a. John **started** to solve the puzzle.  
   b. John **was able** to solve the puzzle.  
   c. John **managed** to solve the puzzle.  
   d. John **tried** to solve the puzzle.

If these EC predicates were like want in being able to embed $\emptyset_{\text{have}}$, then we would expect them to be compatible with the same range of small clause complements that want is. (See section 3.4.2 above.) (65) shows us that this is not the case: these other EC predicates cannot embed any kind of small clause complement:

(65)  
   a. *John started/was able/managed/tried Bill available by 10am.  
   b. *John started/was able/managed/tried Bill off the team.  
   c. *John started/was able/managed/tried Bill starting his work by 10am.  
   d. *John started/was able/managed/tried Bill relieved of his duties.  
   e. *John began/was able/managed/tried Bill to do all the work.

I take the data in (65) as decisive in showing that EC predicates besides want cannot embed $\emptyset_{\text{have}}$.

Another environment where $\emptyset_{\text{have}}$ was posited is in want DP. As we see in (66b), however, start may also take a DP complement.

(66)  
   a. John started to read a book.  
   b. John started [a book].
Is this evidence that start may embed $\emptyset_{have}$? No: a number of considerations support the conclusion that whatever the right analysis is for (66b), it does not involve $\emptyset_{have}$. The first piece of evidence is the most direct: whereas want-DP can usually be replaced by want to have-DP, this is not the case for start:

(67) \textbf{LEXICALIZATION POTENTIAL}

a. John wanted \textbf{to have} a book.

b. ??John started \textbf{to have} a book.

want-DP and start-DP differ also in their modal and temporal properties. (68) shows that DP complements to want are referentially opaque whereas DP complements to start are referentially transparent. (69) shows that want-DP can take temporal modifiers that relate to the temporal orientation of the complement but start-DP cannot.

(68) \textbf{OPACITY}

a. John wanted a book, but there were no books.

b. #John started a book, but there were no books.

(69) \textbf{TEMPORALITY}

a. John wanted a book \textbf{by tomorrow}.

b. #John started a book \textbf{by tomorrow}.

As discussed in the previous section, data like (68a) and (68b) should not be taken as central in motivating concealed clausal structure, since there are tools in formal semantics for dealing with opacity and temporality without verbs. However, given the syntactic motivations for a concealed clausal structure, it does seem likely that the source for the opacity and temporal properties in (68a) and (68b) are tied to this clausal structure, and what (68b) and (68b) show is that start-DP must not have the same kind of clausal structure, if it has any at all.
Finally, (70) shows that these *want-DP and *start-DP differ in their crosslinguistic acceptability. As we see in (70a–b), the Mandarin equivalent of *start-DP is ungrammatical; there must be an overt verb that specifies the right relation. But as we see in (71c–d), *want-DP is grammatical.

(70)  **GRAMMATICALITY INMANDARIN**

a. *zhangsan kaishi yi-ben shu.
Zhangsan begin one-cl book
‘Zhangsan began a book.’

b. zhangsan kaishi {du / xie / bian} yi-ben shu.
Zhangsan begin read write edit one-cl book
‘Zhangsan began to read/write/edit a book.’ (Lin & Liu 2005:13–14)

c. zhangsan xiangyao yi-ben shu.
Zhangsan want one-cl book
‘Zhangsan wants a book.’

d. zhangsan xiangyao {du / xie / bian} yi-ben shu.
Zhangsan want read write edit one-cl book
‘Zhangsan wants to read/write/edit a book.’

I conclude based on the foregoing evidence that whereas *want-DP involves ∅ have, *start-DP does not. This leaves open two possibilities for *start-DP: either there is no concealed structure and the interpretation proceeds via coercion in the sense of Pustejovsky (1995) to supply an appropriate eventive meaning for the DP, or there is concealed structure, but it is different from that in *want-DP (e.g., ∅ do rather than ∅ have). See Pylkkänen & McElree 2006 for a discussion of these possibilities, and see also Piñango & Deo 2012 for an overview of the experimental literature on complement coercion as well as a formal semantics for aspectual predicates based on new data.

There is, however, one predicate whose distributional similarity to *want is so striking that it warrants a parallel analysis: this is the predicate *need. Like *want, *need allows an embedded subject (71a), disallows finite complementation (71b), and tends crosslinguistically to be a restructuring predicate (Wurmbrand, 2002).

(71)  a. John needs Bill to do it.
b. *John needs (that) Bill (would) do it.

Furthermore, *need* can embed the same range of small clauses that *want* can:

(72) a. John needed Bill available by 10am. \( \text{AP} \)
b. John needed Bill off the team. \( \text{PP} \)
c. John needed Bill starting his work by 10am. \( \text{GERP} \)
d. John needed Bill relieved of his duties. \( \text{PPtP} \)
e. John needed Bill to do all the work. \( \text{INF} \)

Finally, *need* can also take a DP complement (73), and unlike the case of *start* DP reviewed above, the behavior of *need* DP is entirely parallel to that of *want* DP with respect to the tests reviewed above.

(73) John needed an apple.

(74) LEXICALIZATION POTENTIAL
    a. John wanted to have an apple.
    b. John needed to have an apple.

(75) OPACITY
    a. John wanted an apple, but there were no apples.
    b. John needed an apple, but there were no apples.

(76) TEMPORALITY
    a. John wanted an apple by tomorrow.
    b. John needed an apple by tomorrow.

(77) GRAMMATICALITY IN MANDARIN
Based on the foregoing tests, I conclude that need is like want in that it realizes a functional head in the inflectional layer of the clause, but may simulate properties of PC predicates by embedding $∅_{have}$. The one remaining mystery is why need seems not to support partial control:

(78)  
\begin{align*}
a. & \quad \text{John wanted to gather at noon.} \\
& \quad \text{b. ??John needed to gather at noon.}
\end{align*}

For Landau, this follows from the fact that want is a desiderative predicate and hence PC whereas need is a modal predicate and hence EC. On the current view, however, the striking parallels between want and need lead us to expect that they should pattern together in supporting partial control (via the hypothesized element $∅_{have}$), but this is contrary to fact.

3.5.3 EC predicates and $∅_{have}$: In search of an explanation

Immediately above I established based on distributional evidence that want is (near-)unique among EC verbs in being able to embed $∅_{have}$. Why should this be? Here I pursue a semantic explanation: want is the only EC predicate that is semantically characterizable as a relation between an individual (the attitude holder) and a proposition. Hence when $∅_{have}$ introduces an individual argument, it may straightforwardly take on the role of attitude holder in the semantics of want.

EC predicates other than want come in two varieties: non-subject-oriented (aspectual predicates like start and modal predicates like be able) and subject-oriented (try and implicative predicates like manage). For the first variety, there is no attitude-holder role to be filled, and so the use of $∅_{have}$ (which introduces an argument without providing it a role in the semantics) leads to semantic
incoherence. For the second variety, I will suggest that although there is an attitude-holder role to be filled, it is semantically restricted in that it must come from somewhere in the VP event. Hence introducing a new attitude holder via $\emptyset_{\text{have}}$ similarly leads to semantic incoherence.

3.5.3.1 Non-subject-oriented EC predicates

Let us begin with aspectual verbs. Following Rochette 1999; Fukuda to appear (cf. Perlmutter 1970), I assume that aspectual verbs are unambiguously raising predicates in the traditional sense that they do not entail anything about their subject. Standard raising/control diagnostics establish that $\text{start}$ is at least sometimes raising, as in (79), and so in the interest of simplicity, the default hypothesis should be that such predicates are always raising.

(79) a. It started to rain.
    b. The doctor started to examine the patient. $\leftrightarrow$ The patient started to be examined by the doctor.
    c. The shit started to hit the fan.

Consequently, unlike $\text{want}$, $\text{start}$ does not contain as part of its meaning a dependent variable; it does not entail anything about its surface subject. If we begin with the simple assumption that any EC verb can embed $\emptyset_{\text{have}}$, then nothing goes wrong syntactically in generating the sentence in (80). Adopting the syntactic assumptions from section 3.3 above, (80) is licensed by the structure in (81).

(80) *John started Bill to go.
The unacceptability of (80), I suggest, follows not from the syntax but rather from something like Sæbo’s pertinence criterion. According to the semantics for \( \emptyset_{\text{have}} \) proposed in section 3.3 above, the semantics of the VP node for the above structure is as follows:

\[
\begin{align*}
(82) & \quad a. \quad [[\text{Bill to go}]] = \lambda e \lambda w. \text{Bill-goes}(e,w) \\
& \quad b. \quad [[\emptyset_{\text{have}} \text{Bill to go}]] = \lambda x \lambda e \lambda w. \text{Bill-goes}(e,w) \\
& \quad c. \quad [[t_3 \emptyset_{\text{have}} \text{Bill to go}]] = \lambda e \lambda w. \text{Bill-goes}(e,w)
\end{align*}
\]

But whereas in the case of want, the argument introduced by \( \emptyset_{\text{have}} \) (here, Bill) binds the dependent variable introduced by want, here in the case of start, it has nothing to bind. Hence the predicted semantics for John started Bill to go is identical to that of John started to go. The simpler structure is preferred since the extra argument Bill is utterly superfluous in the latter case. This is reminiscent of Sæbo’s pertinence criterion: when have does not bind anything in its complement, the result is an odd sentence.\(^7\)

\(^7\) This line of reasoning does, however, require a qualification: we do not want to predict that e.g. John\(_1\) started Bill to open his\(_1\) door should be acceptable provided there is coreference between John and his. The interpretation would be Bill started to open John’s door, the argument John being ‘saved’ from superfluosity by binding a pronoun in the complement to \( \emptyset_{\text{have}} \). I take it that this is because have and \( \emptyset_{\text{have}} \) have somewhat different functions. Because \( \emptyset_{\text{have}} \) is always (as far as we know) found in structures where it is embedded under an inflectional-layer functional head,
Root modals such as can lend themselves to a similar explanation. Bhatt (1998); Hackl (1998); Wurmbrand (1999); Hacquard (2010) argue that they do not θ-mark their subject. If this is correct, then the ungrammaticality of the sentences like (83) follow for the same reason as the equivalent sentences with aspectual verbs: the matrix subject is introduced by ∅_{\text{have}}, does not bind any variable, and so is superfluous to the computation of the meaning of the sentences.8

(83) a. *John had (for) Bill to open the door.
   b. *John was able (for) Bill to open the door.
   c. *John could Bill open the door.

3.5.3.2 Subject-oriented EC predicates

Let us turn next to subject-oriented EC predicates, which are a somewhat trickier case. My remarks here will be limited to try as a ‘case study’, although the expectation is that what I have to say here could extend to other subject-oriented EC predicates like manage as well. Unlike aspectual verbs, try does not pass standard tests for raising predicates:

(84) a. #It tried to rain.
   b. The doctor tried to examine the patient. ↔ The patient tried to be examined by the doctor.
   c. #The shit tried to hit the fan.

8. In Chapter 2, I argued that modal expressions like deontic have do contain a variable as part of their meaning, but this variable is nondependent and so it need not be valued by the subject but can instead be valued by any contextually salient individual. Consequently, there is more to be said about why ∅_{\text{have}} cannot be used to introduce into the structure an argument that can serve as this contextually salient individual. One possibility is to adopt Kratzer’s (2011) ‘designated argument’ approach to the semantics of can, whereby can is keyed to an argument that need not be in subject position but must come from somewhere in the prejacent event description. We might extend this approach to root modals as a class and thereby explain why root modals cannot accommodate an extra argument.
So *try* does entail something about its surface subject, which on the approach espoused here means that it contains as part of its meaning a dependent variable. However, in what follows, I will suggest that the denotation I propose for *try* in Grano 2011 points to a semantic reason for why the individual argument that *try* takes must come from its complement.

Building on Sharvit’s (2003) proposal that *try* is closely related in meaning to progressive aspect, I adopt Condoravdi’s (2009) semantics for the progressive and modify it to capture the meaning of *try*. In particular, Condoravdi proposes the following semantics for the progressive:

\[(85)\quad \text{PROG}(e, P) \text{ is true in } w \text{ relative to } c \text{ with contextual standard } d_c \text{ iff:}\]

- **Degree of realization**: for some \(d\), \(P(w, e, d)\) and \(d \geq d_c\),
- **Ordering source**: there are \(e'\), \(d'\), and \(w'\) such that \(e \subset_{\text{non-final}} e', d \leq d', w' \leq o_i w,\) and \(P(w', e', d')\)

(85a) assumes a degree semantics for events (Piñón 2008; Kennedy & Levin 2008) and says that in order for a progressive sentence to hold, the degree of realization of the event in question must meet or exceed a contextually determined threshold. This context sensitivity is designed to capture parallels like (86a)/(86b): just as there is context sensitivity in how great a portion counts as ‘part of’ the Atlantic in (86a), so there is context sensitivity in how much of the Atlantic must be crossed in order to judge (86b) true.

- **(86)**
  - a. Mary swam across **part of** the Atlantic.
  - b. Mary **was** swimming across the Atlantic.

(85b) relies crucially on a contextually sensitive ordering source \(o_i\). This is designed to capture the observation originally due to Bonomi (1997) that seemingly contradictory progressive sentences can be used to describe the same situation, e.g. in (87).

- **(87)** **CONTEXT**: I boarded a plane headed to NYC but which was hijacked and ended up in DC.
a. I was flying to NYC. (in view of the schedule of the flight)
b. I was flying to DC. (in view of the actual course of events)

For Condoravdi, this paradox is resolved via the contextually determined ordering source: we verify (87a) against an ordering source based on the schedule of the flight whereas we verify (87b) against an ordering source based on what actually ended up happening.

Adopting Condoravdi’s semantics for the progressive, I propose in Grano 2011 that try has the following semantics:

(88) \( \text{TRY}(e, P, a) \) is true in \( w \) iff:

a. **Degree of realization**: for some \( d \), \( P(w, e, d) \) and \( d > 0 \);

b. **Ordering source**: there are \( e', d' \), and \( w' \) such that \( e \subset_{\text{non-final}} e', d \leq d', w' \leq o_a w \), and \( P(w', e', d') \)

*(where \( o_a \) is an ordering source based on a’s intentions)*

(88) differs from Condoravdi’s semantics for the progressive in two crucial ways. First, whereas the progressive is sensitive to a contextually determined degree of realization, try merely requires that the event be realized to a non-zero degree. This is designed to capture facts like (89)–(90).

(89) a. #John was unknowingly paralyzed and was raising his arm.
    b. John was unknowingly paralyzed and tried to raise his arm.

(90) a. #John was cutting a tomato with his mind.
    b. John tried to cut a tomato with his mind.

(89) and (90) set up contexts where the event appears not to be able to ‘get off the ground’: in (89), paralysis prevents John from even beginning to raise his arm, and in (90) (assuming that the speaker does not believe in telekinesis) the event described is impossible. What, then, allows us to judge the try-sentences true but not the progressive sentences? In Grano 2011, I adopt the idea familiar
from action theory that *try* denotes mental action: the internal ‘spark’ in the head that precedes and
causes bodily movement (see e.g. O’Shaughnessy 1973; Hornsby 1980; Pietroski 2008; Lorini &
Herzig 2008). By reifying ‘mental action’ as the initial stage in the structure of the event, we can
account for these *try*-sentences via the proposal that they merely require a non-zero degree of event
realization.

The second crucial way in which *try* differs from the progressive is that whereas the progressive
employs a contextually determined ordering source, *try* requires an ordering source based on the
intentions of the individual named by the surface subject of *try*. Thus in the hijacking scenario,
only the event description consistent with the protagonist’s intentions is judged true:

(91) **CONTEXT:** I boarded a plane headed to NYC but which was hijacked and ended up in DC.

a. I tried to fly to NYC.
b. #I tried to fly to DC.

Table 3.1 summarizes the difference between progressive aspect and *try* on the proposal in
Grano 2011.

<table>
<thead>
<tr>
<th>Prog standard</th>
<th>Prog contextual</th>
<th><em>try</em> standard</th>
<th><em>try</em> contextual</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ d_c</td>
<td>contextual</td>
<td>&gt; 0</td>
<td>intention</td>
</tr>
</tbody>
</table>

**Table 3.1:** Semantic relationship between progressive aspect and *try* in Grano 2011

It is likely that the relationship between the choice of standard and the choice of ordering source
is not accidental. In particular, since the progressive requires the degree of event realization meet
or exceed some contextual threshold, the event is progressed enough that the use of the progressive
can be ‘grounded’ in any of a number of ordering sources: it may be based on the intentions of
the protagonist in the event description, or merely on the physical properties of one or more event
participants and/or properties of the circumstances that the participants find themselves in. With
*try*, however, we look back at the very onset of the event where unpredictability reigns and so
in order to constrain the truth conditions sufficiently that *try* has a useful meaning, we must look specifically to the intentions of a participant in the VP event.

With that idea in mind, now let us go back to our original question: why can *try* not embed *∅* have? When we combine our semantics for *∅* have with the semantics for *try* entertained here, then the truth conditions for (92) should be as in (93).

(92) John tried John *∅* have Bill to open the door.

(93) \[
[(92)] = 1 \text{ iff:}
\]

a. A Bill-opening-the-door event was realized to a non-zero degree.

b. John intended for this event to happen.

Although (93) satisfies the pertinence criterion in that *John* plays a non-trivial role in the semantics (namely that of intention-holder), I suggest that Grano’s (2011) semantics for *try* should be modified so that (93) comes out as nonsensical. The intuition is this: (93) is ruled out on the grounds that the condition in (93a) is not sufficiently informative without reference to the intentions of some participant in the VP event in particular. Because ‘John’ is not a participant in the VP event, his intentions cannot be used to ‘reign in’ what it means for the VP event to have been realized to any degree above zero. Ideally, of course, we would want to modify the semantics for *try* in Grano 2011 so that this restriction falls out automatically rather than having to appeal to a notion like ‘sufficient informativity’; the foregoing is meant merely as a sketch of the basic intuition to be captured.

In chapter 6, section 6.7 below, I will argue that an apparent exception to the ban on embedded subjects under *try* that we see in Greek actually provides further support for the idea that *try* comes with a restriction that the ‘intender’ in a *try*-sentence be part of the prejacent event description. Anticipating what I say there, the observation is that in a Greek sentence like (94), the subject Kostas is obligatorily understood as being part of the prejacent event description in some kind of causative capacity: Kostas tried to *bring it about* that his son be appointed in the bank. Consequently, I suggest there, we can understand crosslinguistic variation in the availability of embedded subjects
under *try* by maintaining the strong generalization that the subject of *try* must always figure in the event description and locating the variation in the (non-)availability of introducing a silent causative predicate as a ‘last resort’ coercion strategy for satisfying the semantic requirement on *try*.

(94) O Kostas prospathise na dhioristi o jios tu stin trapeza.
    the Kostas tried prt be.appointed the son his in.the bank
   ‘Kostas tried for his son to be appointed in the bank.’ (Roussou 2009:1817) GREEK

3.6 A note on Case and passivization

According to a long-standing approach, the embedded subject under *want* is assigned Case by a sometimes null and sometimes overt complementizer *for*, as in (95a). The failure of passivization of the embedded subject to matrix position, as in (95b), can then be understood as a ban on A-movement across a CP. (95) is usefully contrasted with a ‘true’ ECM structure like (96): here, there is no complementizer, whether overt or (by hypothesis) null; the embedded subject receives Case directly from the matrix verb in (96a), and correspondingly, nothing blocks passivization of the embedded subject to matrix subject position, as in (96b). (For relevant discussion, see Bresnan 1972; Postal 1974; Pesetsky 1992; Bošković 1997; Moulton 2009.)

(95) a. John wants (for) Bill to be happy.
    b. *Bill was wanted (by John) to be happy.

(96) a. John believed (*for) Bill to be happy.
    b. Bill was believed (by John) to be happy.

What I have proposed in this chapter regarding *want* is consistent with the view that a (sometimes covert) *for* assigns Case in sentences like (95a). However, to maintain the idea that the complement to $\emptyset_{have}$ is a small clause or $\varepsilon P$, this Case assigner must be something lower in the clausal structure than a complementizer, as in (97).
(97) John wants \(_{VP \text{John}} \emptyset_{have} [_{VP \text{(for) Mary to stay}}]]

If this is right, then the ban on passivization out of \textit{want} must have an explanation that does not rely on the presence of an intervening C. Jason Merchant (p.c.) notes that (98a) (cf. (98b)) provides independent evidence for dissociating the ban on passivization with \textit{want} from conditions on A-movement: \textit{want} resists passivization even when no A-movement is at stake:

(98) a. *It was wanted for them to leave.
   b. It would be great for them to leave.

The alternative explanation we can pursue, under the functional restructuring approach to EC predicates, is that \textit{want} sits higher in the clausal structure than Voice, the head that regulates active/passive alternations. Consequently, it is ineligible for passivization. (See chapter 1, note 13 for a similar suggestion.) Note also that \textit{want} (in English) disallows ‘long’ passivization of its embedded direct object to matrix subject position, as in (99). This means that to the extent that sentences like (100) are acceptable (cf. Merchant 1999), they reflect a true lexical use of \textit{want} — an option that I proposed in chapter 2, section 2.4.4.2, is available for all restructuring predicates.

(99) a. John wants to eat an apple.
   b. *An apple was wanted (by John) to eat.

(100) (?) A miracle is wanted.

3.7 Conclusion

In summary, the purpose of this chapter was to explain the mixed properties of \textit{want}. On the one hand, \textit{want} behaves like an inflectional head in a monoclausal raising structure in that it tends to restructure crosslinguistically and it disallows finite complementation in English. But on the other hand, \textit{want} behaves like a matrix lexical verb in a biclausal control structure in that it supports
partial control and allows for an overt embedded subject. To explain this, I pursued the idea that although *want* participates in a monoclusal raising structure, it is special among restructuring verbs in being able to embed a null main verb $\theta_{have}$ which in turn gives rise to partial control and the availability of overt embedded subjects.

In order to substantiate this approach, I provided $\theta_{have}$ with a semantics based on that for *have* proposed in Sabø 2009, and I showed that this allows for a uniform semantics of $\theta_{have}$ both in sentences like *John wants $\theta_{have}$ an apple* and *John wants $\theta_{have}$ Bill to go*. I furthermore investigated the distribution of $\theta_{have}$, *have* and *get* in complements to *want* and showed that the distribution of $\theta_{have}$ tracks the distribution of *have/get* to a considerable degree. Finally, the important question arose of why *want* should be special in being able to embed $\theta_{have}$. Without a principled explanation for this fact, we run the risk of erroneously predicted that all restructuring predicates should display the same mixed properties that *want* does. The explanation I pursued was semantic: only *want* relates an arbitrary individual to a proposition and hence can deal with the extra argument introduced by $\theta_{have}$. All other restructuring predicates either fail to entail something about their subject (aspectual verbs and root modals) or may do so only when the entity denoted by the subject plays a role in the main VP (implicative verbs and *try*). Hence for these predicates, the extra argument introduced by $\theta_{have}$ fails to integrate semantically and the structure is ruled out.
CHAPTER 4
CONTROL, RESTRUCTURING, AND TEMPORAL INTERPRETATION

4.1 Introduction

In the previous three chapters, we have seen that the two classes of ‘control’ predicates exemplified by (1) and (2) respectively — repeated from the Introduction — differ in a number of crucial properties, including the availability of partial control, finite complementation, overt embedded subjects, and overt restructuring effects (in languages that exhibit such effects). I also argued that the best account of these facts is that suggested by Cinque (2006): (1) instantiates biclausal control structures whereas (2) instantiates monoclausal raising structures.

(1)  a. John was shocked [to get an A].  
     b. John claimed [to have gotten an A].  
     c. John wondered [how to get an A].  
     d. John wished [to get an A].  
     e. John planned [to get an A].

(2)  a. John wanted [to get an A].  
     b. John had [to get an A].  
     c. John tried [to get an A].  
     d. John managed [to get an A].  
     e. John started [to get an A].

The purpose of this chapter is to bring an additional consideration to bear on the proper analysis of these structures: infinitival tense. According to my analysis, the structures in (1) are biclausal whereas the structures in (2) are monoclausal. Consequently, the former structures exhibit two projections of Tense whereas the latter structures exhibit just one projection of Tense, and we should be able to find evidence for this dichotomy in the temporal properties of these structures.

Aside from providing an important source of empirical support for my overall proposals, the investigation in this chapter is important for at least two additional reasons. First and foremost, Landau’s (2000) analysis of the EC/PC split is tied crucially to tense, supported by his descriptive generalization that EC predicates disallow matrix/embedded tense mismatches whereas PC predicates allow matrix/embedded tense mismatches. Consequently, one of the measures of the success
of my alternative proposal will be the extent to which it accounts for such data. Second, the study of infinitival tense has in fact been important in theorizing about control since Stowell (1982), who generalized (incorrectly, as we will see) that controlled infinitives are uniformly interpreted as futurate with respect to matrix tense. This proposal was later resurrected by Martin (1996, 2001) (see also Pesetsky 1992; Bošković 1997) in service of working out a principled explanation of the distribution of PRO under Chomsky and Lasnik’s (1993) ‘null Case’ approach. More recently, Wurmbrand (2011) (see also Wurmbrand 2006, 2007) has argued that controlled infinitives come in three temporo-aspectual varieties whose properties are determined by what clausal functional heads they project: non-future infinitives are AspPs, future infinitives are wollPs, and propositional non-future infinitives are TPs. Wurmbrand’s evidence and arguments for this state of affairs will be reviewed in some detail below.

In a sense, this chapter is an exercise in bringing Wurmbrand’s (2011) data and argumentation to bear on the EC/PC split (and in particular, my analysis of EC as monoclausal and PC as biclausal). In a nutshell, what we will see is that there are two ways in which the EC vs. PC status of an embedding predicate constrains the temporo-aspectual properties of its infinitival complement. First, among EC predicates, some support futurity (as in (3a), where there is a present-tense obligation with respect to a future state of affairs1), and some support simultaneity (as in (3b), where ‘managing’ is simultaneous with ‘opening the door’), but none support anteriority: that is, there are no EC predicates that could replace have or manage in (3c) to yield a grammatical sentence in which infinitival tense is anterior to matrix tense. This is in contrast to PC predicates, where — given the right choice of matrix predicate and the right kind of infinitive — all three temporal relations are possible, as shown in (4).

(3) a. I have to go tomorrow.  
   b. John managed to open the door.

   1. Cf. Landau 2000, who argues that EC predicates do not support futurity. Landau’s argument for this position and my reason for rejecting it will be discussed below.
c. *Today, John had/managed to {open / have opened} the door yesterday. **ANTERIORITY**

(4)   a. John planned to make money. **FUTURITY**

     b. John claimed to be tall. **SIMULTANEITY**

     c. Today, John claimed to have opened the door yesterday. **ANTERIORITY**

The second way in which the EC vs. PC status of an embedding predicate constrains the temporo-aspectual properties of its infinitival complement is that among PC predicates that support simultaneity (which is a small set consisting possibly of the singleton *claim*), the infinitive must either be stative (5a) or marked in some special way (aspectual *be, have*, or a quantification adverb, as in (5b–d)), but cannot consist of a bare episodically interpreted eventive predicate (5e). This is in contrast to EC predicates that support simultaneity, which are not restricted in this way (6).

(5) a. John claimed to be happy.

     b. John claimed to be smoking.

     c. John claimed to have smoked.

     d. John claimed to smoke habitually.

     e. *John claimed to smoke right then.

(6) John managed to smoke right then.

I will argue that both of these ‘gaps’ — the lack of EC predicates the support anteriority and the lack of PC predicates that support simultaneity with a bare episodically interpreted eventive predicate — follow from the monoclausality of EC and the biclausality of PC. In particular, anteriority is unavailable in EC structures because, unlike futurity, it is contingent on the projection of an embedded tense. That is, I follow Wurmbrand (2011) and much previous work in thinking that futurity is contributed not by tense *per se* but rather via an abstract modal or aspectual morpheme *woll* which (following Wurmbrand) may project in an infinitive to yield futurity without tense.

As for the ban on bare episodically interpreted eventive infinitives under PC predicates that
support simultaneity (in other words, the asymmetry in (7)), I will follow Wurmbrand (2011) in
drawing an analogy between (7a) and (8): in both cases, the combination of a nonpast tense with a
bare eventive predicate yields ungrammaticality. (7b), however, because it is monoclausal, involves
only a single projection of \textit{past} tense, and so a bare eventive predicate is supported.

(7) a. *John claimed to smoke right then.
    b. John managed to smoke right then.

(8) *John smokes right now.

The organization of the rest of this chapter is as follows. In section 2, I provide a brief history
of the role of infinitival tense in theorizing about control. Section 3 lays out the descriptive gener-
alizations that will inform the analysis by systematically investigating the availability of different
temporal relations (simultaneity, posteriority, anteriority) as a function of the EC or PC status of
the embedding predicate. Section 4 presents the analysis, revisiting each temporal relation in turn
and showing how their proper syntactic analysis (mostly adopted from Wurmbrand 2011) interacts
with the mono- vs. bi-clausality of EC/PC to predict the right facts. Section 5 is an initial attempt
at extending the analysis to factive predicates, which have been factored out of the main discussion
because they pose some special puzzles that will require additional investigation. Finally, section
6 concludes.

4.2 A brief history of the role of infinitival tense in theorizing about control

The story begins with Stowell (1982), who generalized that controlled infinitives have a temporal
interpretation that is futurate with respect to matrix tense, whereas ECM infinitives lack their own
tense specification and instead, their temporal interpretation is determined by the semantics of
the embedding predicate. Evidence for this generalization comes from data like (9)–(10). The
controlled infinitives in (9) have a futurate interpretation in the sense that, according to Stowell,
the ‘remembering’ precedes the ‘bringing’ in (9a) and the ‘trying’ precedes the (possibly successful) ‘locking’ in (9b).² The ECM infinitives in (10), on the other hand, are not limited in this way, and they can be interpreted as simultaneous (10a), futurate (10b), or past (10c) with respect to matrix tense depending on the semantics of the embedding predicate.

(9)  a. Jenny remembered [to bring the wine].
      FUTURE
    b. Jim tried [to lock the door]. (Stowell 1982:563)
      FUTURE

(10)  a. Bill considers [himself to be the smartest].
       PRESENT
    b. I expect [John to win the race].
       FUTURE
    c. I remember [John to be the smartest]. (Stowell 1982:565–566)
       PAST

Stowell’s generalization is resurrected by Martin (1996, 2001) in service of working out a principled explanation of the distribution of PRO using Chomsky and Lasnik’s (1993) ‘null Case’ approach. (See also Bošković 1997, who, citing earlier work by Martin, more or less adopts Martin’s conclusions about infinitival tense.) In resurrecting Stowell’s generalization, Martin brings a few additional considerations to the table. First, he notes that controlled infinitival complements to implicative and factive predicates pose an apparent problem to the generalization in that they are not future-oriented: in the implicative example in (11a), it is entailed that John opened the door (in the

² Somewhat ironically, both of the examples Stowell used to illustrate the point are ones which more recently (Landau 2000; Wurmbrand 2011; this dissertation) would be analyzed as involving ‘simultaneous’ infinitives, as evidenced by the unavailability of conflicting temporal modifiers (ia–b). A better matrix predicate to use would have been want (ic).

(i)  a. *Two days ago, Jenny remembered to bring the wine yesterday.
      b. *Two days ago, Jim tried to lock the door yesterday.
      c. Two days ago, Jim wanted to lock the door yesterday.

And although (ia) might be written off as a special case since remember is an implicative predicate (see the discussion of Martin 1996, 2001 below), the asymmetry between (ib) and (ic) poses a serious problem for the view that controlled infinitives have a uniform temporal interpretation.
past), and in the factive example in (11b), it is presupposed that John got an A (in the past).  

(11)  
    a. John managed to open the door.  
    b. John was surprised to get an A.

In the face of data like this, Martin modifies Stowell’s generalization to the claim that infinitival tense “can be one of a restricted number of modals” (Martin 2001:149), analogous to the way English modal will is typically future-oriented but can also encode non-future-oriented modal meanings such as epistemic or dispositional necessity under certain conditions. (See also Bošković 1997, who follows Pesetsky 1992 in claiming that the infinitival marker to is a modalized tense morpheme in factive and implicative contexts.) Although this is an interesting attempt to unify the range of temporal interpretations available to controlled complements, Martin is not entirely convincing in showing that ‘futurity’, ‘implicative-induced anteriority’, and ‘factive-induced anteriority’ constitute any kind of natural class, and in any case, as will be shown below in reviewing Wurmbrand

3. In presenting data parallel to (11), Martin does not consider the question of whether the past-oriented nature of the infinitives follows from the fact that the embedding predicates are themselves past tense, or whether on the other hand these embedding predicates always take past-oriented infinitives regardless of matrix tense. In fact, there is an asymmetry: for implicatives, the infinitival complement is interpreted as simultaneous to matrix tense, and so only in (ia) but not in (ib) will the infinitive have a ‘past’ interpretation. For factives, on the other hand, the infinitival tense is necessarily past-oriented with respect to matrix tense, since the event in the infinitive causes (and hence precedes) the emotive state denoted by the embedding factive predicate. Thus in both (iia) and (iib), ‘getting an A’ precedes ‘being surprised’. 

(i)  
    a. John managed to open the door.  
    b. John will manage to open the door. 

(ii)  
    a. John was surprised to get an A.  
    b. John will be surprised to get an A.

The simplest explanation for this is that implicative predicates like manage take ‘simultaneous’ infinitives whereas factive predicates like be surprised take ‘past-oriented’ infinitives. In any case, both of these states of affairs are unexpected under Stowell’s (1982) generalization that controlled infinitives are furturate.

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Concerns about implicative and factive predicates aside, Martin (2001) also presents additional evidence for Stowell’s generalization from the distribution of eventive predicates. Based on the split in (12)–(13), it appears that controlled infinitives can be eventive whereas ECM and raising infinitives cannot. (Compare (13a) to (14): ECM complements to believe must either be stative, contain aspectual marking like have or be, or be habitually/generically interpreted.)

(12)  
   a. Ginny remembered to bring the beer.
   b. Sara convinced Bill to go to the party.
   c. Bob wants to buy a new camera. (Martin 2001:147)

(13)  
   a. *Ginny believed Rebecca to win the game.
   b. *The doctor showed Bill to take the wrong medicine.
   c. *The defendant seems to the DA to steal the car. (Martin 2001:150)

(14)  
   a. Ginny believed Rebecca to be tall.
   b. Ginny believed Rebecca to have won the game.
   c. Ginny believed Rebecca to be winning the game.
   d. Ginny believed Rebecca to win the game every time she played.

Adopting the position in Enç 1991 that eventive predicates must be bound by a temporal or modal operator, Martin (2001) claims that the split automatically follows: in (13) the infinitives are controlled and hence contain a temporal or modal operator to license the eventive predicate, whereas in (14), the infinitives are not controlled, and so there is no temporal or modal operator to license the eventive predicate.4

4. Martin (2001) also presents another argument for Stowell’s generalization on the basis of VP-ellipsis data, which I will not review here. See Wurmbrand (2011:3), who presents Martin’s data and argues that VP ellipsis does not correlate with infinitival tense in the way Martin claims.
Wurmbrand (2011) exposes two crucial problems for the Stowell-Martin view that controlled infinitives have a uniform temporal interpretation. First, although plenty of predicates behave as expected under the Stowell-Martin view in embedding controlled infinitives with future orientation, there are also predicates whose controlled infinitival complements have a simultaneous interpretation. Wurmbrand demonstrates this point with data from temporal modifiers. The predicates in (15a) embed futurate infinitives whereas the predicates in (15b) embed simultaneous infinitives, as evidenced by the infelicity of a conflicting temporal modifier in the latter case. Although one could counter that manage is an implicative predicate and hence embeds a special kind of modal/temporal operator responsible for simultaneity, such a line of reasoning could not extend to try and begin, which are not implicative.

(15)  
  a. Yesterday, John decided/wanted/planned to leave tomorrow.  
  b. Yesterday, John tried/began/managed to leave (*tomorrow).

Second, there is at least one predicate that embeds controlled infinitives with exactly the properties claimed by Martin (2001) to be impossible for controlled infinitives. Recall Martin’s observation that ECM infinitives — such as embedded by believe — cannot be eventive without the help of special operators: thus a stative ECM infinitive is grammatical (16a), but an eventive ECM infinitive is not (16b), unless supported by aspectual be or have (16c–d) or a quantificational adverb (16e). The problem, as Wurmbrand points out, is that claim embeds controlled infinitives with exactly the same properties: observe the parallelism between (16) and (17).

(16)  
  a. John believed Bill to be happy.  
  b. *John believed Bill to smoke right then.  
  c. John believed Bill to be smoking.  
  d. John believed Bill to have smoked.  
  e. John believed Bill to smoke habitually.
(17)  
  a. John claimed to be happy.
  b. *John claim to smoke right then.
  c. John claimed to be smoking.
  d. John claimed to have smoked.
  e. John claimed to smoke habitually.

In light of this more nuanced set of data, Wurmbrand (2011) argues that controlled infinitives come in three classes whose temporal properties are determined by the size and nature of their clausal projection: future irrealis and non-future infinitives lack their own projection of Tense, but differ in that the former projects woll (i.e., the abstract future modal underlying will and would as argued by Abusch 1985 and many others) whereas the latter projects Asp. propositional non-future infinitives (i.e., those that disallow bare eventive predicates), on the other hand, do contain Tense.

(18)  
  a. John decided [to be happy].  
      FUTURE IRREALIS: wollP 
  b. John tried [to be happy].  
      NON-FUTURE: AspP 
  c. John claimed [to be happy].  
      PROPOSITIONAL NON-FUTURE: TP

Wurmbrand’s evidence for this state of affairs will be reviewed in great detail below, since it will be crucial in establishing my own ultimate conclusion that non-future infinitives necessarily participate in monoclausal structures, propositional non-future infinitives necessarily participate in bi-clausal structures, and future irrealis can participate in both mono- and bi-clausal structures.

Aside from Wurmbrand’s work, another important recent development in the study of infinitival tense under control is Landau’s (2000) claim — discussed in some detail in chapter 1— that partial control predicates take tensed complements and exhaustive control predicates take untensed complements. Thus according to Landau (but modulo my reclassification of want as underlying EC), the predicates in (19) all support matrix/embedded tense mismatches whereas the predicates in (20) do not.
But whereas for Landau, the infinitives in (19) and the infinitives in (20) both project Tense (differing only in whether it is semantically contentful), my alternative position articulated in the three previous chapters is that the structures in (19) are biclausal (hence projecting two instances of Tense) and the structures in (20) are monoclausal (hence projecting only one instance of Tense). It is the task of the rest of this chapter to use infinitival tense data to provide further support for this position.

### 4.3 Descriptive generalizations

Pretheoretically, we can distinguish three logically possible temporal relations that may hold between two temporally interpreted expressions $e_1$ and $e_2$: simultaneity ($e_1$ overlaps with $e_2$), posteriority ($e_1$ follows $e_2$), and anteriority ($e_1$ precedes $e_1$). In what follows, I will consider each one of these relations as they apply to control constructions, investigating how their availability interacts with the status of the embedding predicate as EC or PC.

#### 4.3.1 Simultaneity

The data in (21) establish that at least some EC predicates support a relation of simultaneity between the matrix and embedded levels. In fact, these data show that the predicates in question force such a relation, as evidenced by the ungrammaticality of pairing a past-oriented matrix time adverbial (yesterday) with a future- or relative-past-oriented adverbial (tomorrow and the day before) in the infinitive. (As has been mentioned several times already, Landau claims that obligatory simultaneity holds for all EC predicates. Here, my interest is solely in establishing that it does indeed hold...
at least sometimes. In the next subsection, I will question Landau’s stronger generalization.

(21)  
   a. Yesterday, John **managed** to open the door (*tomorrow/*the day before).  
   b. Yesterday, John **tried** to open the door (*tomorrow/*the day before).  
   c. Yesterday, John **started** to open the door (*tomorrow/*the day before).  

Turning to PC predicates, the sentence in (22) documents a case where a PC predicate behaves the same way as the EC predicates just discussed: the ungrammaticality of the parenthetical time adverbials evidences a relation of obligatory simultaneity between the matrix and embedded levels. (The PC predicate *claim* does admit an anteriority relation via perfective morphology on the infinitive: *Yesterday, John claimed to have been happy the day before.* See below for more on this.)

(22) **Yesterday, John claimed to be happy *(tomorrow/the day before).**

However, it turns out to be important that the infinitive in (22) is stative. As the following data show, when the infinitive is eventive, the sentence is ungrammatical when the infinitive is interpreted episodically (23a) but grammatical when interpreted generically/habitually (23b) or when accompanied by progressive morphology (23c). (Credit goes to Wurmbrand (2011 and earlier work) for observing this property of *claim* — a property previously argued by Martin (1996, 2001) to be found only among ECM predicates like *believe.*) As indicated by the ungrammatical parenthetical material, the grammatical variants evidence obligatory simultaneity. That is, (23b) is grammatical as long as John’s claim is a characterizing statement about John that held at a time which overlaps with the claiming time. (23c) is grammatical as long as John’s claim is a statement about John’s action in progress that held at a time which overlaps with the claiming time.

(23)  
   a. *John claimed to open the door right then.*  
   b. Last year, John claimed to open the door every morning (*the year before/*the next year).
A few seconds ago, John claimed to be opening the door (*the minute before/*the next minute).

Insofar as habituality and progressive aspect constitute a kind of derived stativity, the generalization that emerges from (22)–(23) is that for at least some PC predicates (in particular, claim), simultaneity obtains, but if the infinitive is eventive rather than stative, the sentence is ungrammatical.

To sum up the results from this subsection, we have seen that at least some EC predicates give rise to (obligatory) simultaneity and that at least some PC predicates do so as well, but with the additional restriction that the infinitive must be stative for grammaticality.

4.3.2 Posteriority

In this subsection, we investigate the availability of future-oriented infinitives in EC and PC constructions.

In Chapter 3, I argued that, due to its mixed properties, want should be classified as EC, with certain PC properties emerging when it combines with the silent verb ∅ have. This reclassification disrupts Landau’s generalization that EC predicates disallow tense mismatches. As we see in (24), want is compatible with a matrix tense that differs from the temporal orientation of its complement.

(24) Yesterday, John wanted to do it tomorrow.

One possible reaction to this fact would be to try to salvage Landau’s generalization by blaming this fact on ∅ have. As proposed in Chapter 3, ∅ have is responsible for a number of PC-like properties manifest in want. However, this move makes the prediction that in contexts that force exclusion of ∅ have (namely, restructuring contexts), tense mismatches with want should be unacceptable. As the following minimal pair from Italian shows, this prediction is false: regardless of the presence or absence of overt restructuring effects (here, clitic climbing), tense mismatches with volere ‘want’ are possible.
(25) a. Ieri, volevo farlo domani.
    yesterday I.wanted do.it tomorrow

b. Ieri, lo volevo fare domani.
    yesterday it I.wanted do tomorrow

‘Yesterday, I wanted to do it the next day (i.e., today).’

An alternative strategy for dealing with this fact is to weaken Landau’s generalization: EC predicates do allow tense mismatches, but only ones in which the lower tense is futurate with respect to the higher tense. And in fact, there is evidence that such a modification of Landau’s generalization is necessary even if we disregard want. In particular, Landau classifies root modals like have on its obligation reading as EC predicates that disallow tense mismatches. Landau presents the sentence in (26) to demonstrate that have disallows tense mismatches: matrix yesterday conflicts with embedded tomorrow.

(26) *Yesterday, John had to solve the problem tomorrow. (Landau 2000:57)

However, I believe that it is hasty to take sentences like (26) as confirmation that have disallows tense mismatches. Digging a little deeper produces some counterexamples. First, (27) is perfectly grammatical and natural even though there is past tense on have in combination with a future-oriented adverbial tomorrow in its complement.

(27) (When I asked to see the manager,) they told me I had to come back tomorrow.

It is important to note that in (27), had is embedded under another past tense verb. Hence ‘sequence of tense’ applies, and the temporal interpretation of had is not the same as it would be in an unembedded context like (26). Still, though, there is a tense mismatch: the time of the obligation is simultaneous with the time of asking to see the manager; the coming back is futurate with respect to this reference time. It is also possible to find unembedded contexts where have has present tense and its complement is future-oriented, such as in (28). Here, we have an obligation that holds at speech time, but the obligation is with respect to a future state of affairs.

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(28) I have to leave tomorrow.

A possible reaction to (28) would be to attribute its acceptability to the well-known fact that English present tense can be used in talking about the future; i.e., one might hypothesize that (28) is acceptable for the same reason as (29).

(29) I leave tomorrow.

However, this approach is not tenable, because have is not eventive, and non-eventive predicates cannot be used in the present tense to express the future. This is illustrated in (30) (cf. (31)).

(30) a. #I’m happy tomorrow.

b. #I know how to count to ten in French tomorrow.

(31) a. I’ll be happy tomorrow.

b. I’ll know how to count to ten in French tomorrow.

In sum, then, the acceptability of examples like (32a–b) illustrates that Landau’s generalization is too strong: EC predicates do allow certain kinds of tense mismatches under certain conditions. The remaining puzzle is to explain what accounts for the oddity of (32c). (Anticipating what I say below, the hashmark in (32c) should be understood as a judgment about the acceptability of the sentence out of context: in an appropriate context, as we will see below, (32c) becomes acceptable.)

(32) a. I have to leave tomorrow.

b. (When I asked to see the manager,) they told me I had to come back tomorrow.

c. #Yesterday, John had to solve the problem tomorrow.

Without coming to a firm conclusion, I will here offer two hypotheses for the asymmetry between (32a–b) and (32c), to be worked out in more detail in future research.

The first hypothesis is that the asymmetry has to do with conditions on actuality entailments:
something about (32c) forces (or at least strongly weighs in favor of) an actuality entailment so that
Yesterday, John had to solve the problem entails Yesterday, John solved the problem, which conflicts
with tomorrow. We might hypothesize that it is simple past tense on have that triggers the actuality
entailment: when have is used in the present tense, as in (32a), or when had is embedded under
another past tense verb told and gives rise to ‘sequence of tense’, no actuality entailment obtains. In
the rapidly growing literature on actuality entailments (see especially Bhatt 1999; Hacquard 2006,
2009; Mari & Martin 2007; Piñón 2009; Homer 2010; Kratzer 2011; Giannakidou & Staraki to
appear), the verdict is still out on precisely what conditions trigger them, but it is generally agreed
upon (albeit with some important qualifications) that they are associated with perfectivity on the
modal. Given that English simple past tense is perfective whereas present tense is imperfective, this
is a plausible account of the asymmetry in (32). As support for this hypothesis, notice that when
the actuality entailment is explicitly canceled, as in (33), acceptability of the conflicting temporal
modifiers improves.

(33) Yesterday, John had to solve the problem tomorrow, but then his teacher changed the sched-
ule, and so now he has to solve it next week.

However, this hypothesis also predicts that if we change matrix tense in (32c) to present tense
so that the actuality entailment is suppressed, the sentence should become felicitous. But by my
judgment, (34) sounds equally odd (when judged out of context: compare (35)).

(34) #Today, John has to solve the problem tomorrow.

(35) Today, John has to solve the problem tomorrow, but his fickle teacher will likely change
the rules so that tomorrow, he will have to solve the problem next week.

This fact suggests a second hypothesis: perhaps under some conditions there is a constraint against
the use of (certain) time adverbials in reference to a modal’s temporal perspective. It is well ac-
known as discussed in Chapter 2, Hackett (2010) shows that epistemic modals are interpreted relative to speech time and root modals are interpreted relative to the time of the VP-event. (See also Condoravdi’s (2002) distinction between ‘temporal perspective’ and ‘temporal orientation.’) And yet, there is something odd about explicitly referring to a modal’s evaluation time via an adverbial: (36a) is odd on a reading where right then is meant to pick out the time of the obligation, divorced from the time of taking the train, just as (36b) is odd on a reading where right now is meant to pick out the time of the speaker’s epistemic state. On this hypothesis, the remaining task is to explain why the explicit use of time adverbials improves in special contexts, like (35).

(36) a. ??Right then, Mary had to take the train.

b. ??Right now, Mary had to be at home.

I leave it to future research to work out the consequences of these two hypotheses. For current purposes, the important conclusion is that we have to abandon Landau’s generalization that EC predicates disallow tense mismatches, and instead replace it with the following weaker generalization:

(37) **Generalization**: Some EC predicates impose simultaneity (implicative, aspectual); some EC predicates are future-shifting (*want*, modals)

I turn now to PC predicates. It is clear that there are PC predicates that allow future-oriented infinitival complements. This mostly consists of Landau’s class of desiderative predicates:

(38) a. Yesterday, John **hoped** to do it tomorrow.

b. Yesterday, John **agreed** to do it tomorrow.

c. Yesterday, John **planned** to do it tomorrow.

d. Yesterday, John **decided** to do it tomorrow.

e. Yesterday, John **promised** to do it tomorrow.
f. Yesterday, John offered to do it tomorrow.

All of the bolded predicates in (38) are classified by Landau as PC, and as we see from the possibility of *yesterday* and *tomorrow* co-occurring, a relation of posteriority is allowed here. Of course, this state of affairs does not hold for all PC predicates: *claim*, as reviewed in the previous subsection, imposes a relation of simultaneity with its (obligatorily stative) complement, as seen in (39).

(39)  *Yesterday, John claimed to be happy tomorrow.

To sum up, we have seen in this subsection that some (though not all) EC predicates allow future-oriented infinitives, and some (though not all) PC predicates allow future-oriented infinitives as well.

### 4.3.3 Anteriority

Finally, in this subsection, we look at the availability of anteriority relations in EC and PC constructions. Turning first to EC, we already saw in sections 4.3.1 and 4.3.2 that certain EC predicates impose simultaneity and others allow for posteriority. However, it does seem to be the case that no EC predicates allow the anteriority relation. This is confirmed via the following data. (40) establishes that posteriority is not available for infinitives that have no overt temporal or aspectual marking; (41) shows that this generalization continues to hold even when a posterior relation is attempted via *have...-en* morphology on the infinitive.

(40)  a. Today, John managed to open the door (*yesterday).

b. Today, John tried to open the door (*yesterday).

c. Today, John started to open the door (*yesterday).

d. Today, John had to open the door (*yesterday).

e. Today, John wanted to open the door (*yesterday).

(41)  a. Today, John managed to have opened the door (*yesterday).
b. Today, John **tried** to have opened the door (*yesterday).
c. Today, John **started** to have opened the door (*yesterday).
d. Today, John **had** to have opened the door (*yesterday).
e. Today, John **wanted** to have opened the door (*yesterday).

As pointed out by Landau (2000:59), the grammaticality of a sentence like (42) might at first glance be taken as a counterexample to this generalization. However, as Landau points out, “auxiliary *have* in infinitives is always ambiguous between past tense and present perfect interpretations.” This is why — as Landau also points out — it is important to include an adverbial like *yesterday* in the infinitive to filter out the present perfect interpretation. (Cf. (43) for evidence that the present perfect is incompatible with *yesterday*.)

(42) John **managed** to have opened the door before it got too hot.

(43) I have opened the door (*yesterday).

I turn now to PC predicates. As noted above, *claim* allows a past-oriented infinitive when the infinitive uses *have...-en*:

(44) Today, John **claimed** to have opened the door yesterday.

The other main class of PC predicates that are associated with past-oriented infinitives is the factive class. However, because this class raises some especially thorny complications, I will leave them for a separate section (section 4.5) that follows the basic analysis.

It is also important to note that not all PC predicates behave like *claim*. In particular, those investigated in section 4.3.2 above do not admit past-oriented infinitives. As with EC predicates, this is true both with temporally and aspectually unmarked infinitives (45) and with infinitives occurring with *have...-en* (46).

(45) a. *Today, John **hoped** to do it yesterday.*

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b. *Today, John agreed to do it yesterday.
c. *Today, John planned to do it yesterday.
d. *Today, John decided to do it yesterday.
e. *Today, John promised to do it yesterday.
f. *Today, John offered to do it yesterday.

(46) a. *Today, John hoped to have done it yesterday.
b. *Today, John agreed to have done it yesterday.
c. *Today, John planned to have done it yesterday.
d. *Today, John decided to have done it yesterday.
e. *Today, John promised to have done it yesterday.
f. *Today, John offered to have done it yesterday.

To summarize the results from this subsection, we have seen that no EC predicates permit an anteriority relation and that some (but not all) PC predicates do admit an anteriority relation with obligatory have...-en on the infinitive.

4.3.4 Summary

Table 4.1 summarizes the results of this section regarding the relationship between the EC/PC split and the temporal interpretation of infinitives.

<table>
<thead>
<tr>
<th></th>
<th>EC</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneity</td>
<td>Yes</td>
<td>Yes (stative only)</td>
</tr>
<tr>
<td>Posteriority</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Anteriority</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 4.1: Empirical relationship between EC/PC and infinitival tense

As this table shows, there are two “gaps” in the temporal interpretation of infinitives that have to do with the status of the embedding predicate as EC or PC. The first gap is that among PC predicates that admit a simultaneity relationship (in particular, claim), the infinitive must be stative
in order for the sentence to be grammatical. The second gap is that there are no EC predicates that admit a relationship of anteriority.

Note that this table abstracts away from requirements that may be imposed by particular members of the EC or PC class. For example, not all EC predicates admit a posteriority relation. The value “Yes” simply indicates that at least some predicates in the relevant class exhibit the indicated temporal relation at least some of the time.

In the next section, I will offer a theoretical account of the generalizations in this table.

4.4 Analysis

4.4.1 Simultaneity

The purpose of this subsection is to explain the asymmetry in (47).

\[(47)\] When an EC predicate embeds an infinitive with a simultaneous interpretation, the infinitive can be either stative or eventive; when a PC predicate embeds an infinitive with a simultaneous interpretation, the infinitive must be stative.

This asymmetry is illustrated in (48)–(49). As we see in (48), infinitival complements to the EC predicate *manage* are not restricted in terms of their aspectuality whereas infinitival complements to the PC predicate *claim* may not be eventive (49a) but rather must be stative, either via progressive morphology (49b), a generic/habitual interpretation (49c), or an inherently stative predicate (49d).

\[(48)\] a. John managed to open the door right then.

\[\] b. John managed to be opening the door right then.

\[\] c. John managed to open the door every morning.

\[\] d. John managed to be happy.

\[(49)\] a. *John claimed to open the door right then.

\[\] b. John claimed to be opening the door right then.
c. John claimed to open the door every morning.

d. John claimed to be happy.

The basic claim to be made here is that this asymmetry follows naturally from the view advocated in this dissertation that EC structures are monoclausal whereas PC structures biclausal, coupled with some other reasonable assumptions. The reasoning involves three steps: First, we will see, more or less following Wurmbrand (2011), that there are certain constraints on licit combinations of tense and aspect in English (section 4.4.1.1). This will lead to the conclusion that the asymmetry between (48a) and (49a) is expected, as long as the former contains no embedded tense whereas the latter contains an embedded tense which is either present (T[PRS]) or vacuous (T[∅]) (section 4.4.1.2). Third, we will review Wurmbrand’s (2011) evidence that claim in fact embeds T[∅] (section 4.4.1.3).

4.4.1.1 Constraints on T/Asp combinations

The first step in the argumentation is the following claim (paraphrased from Wurmbrand 2011):

(50) Some combinations of Tense and Aspect are not permitted in English: episodic eventive predicates permit T[PST]/Asp[PRF] but not T[PRES]/Asp[PRF] or T[∅]/Asp[PRF].

There is a lot to unpack here. I start by saying a few words about the morphosyntactic realization of Asp[PRF] in English. I follow Wurmbrand (2011) in assuming that in the context of an episodic eventive predicate, perfectivity is signaled by the absence of any overt aspectual morphology. This assumption is supported by data like (51): (51a) entails that John saw Bill get to the other side of the street whereas (51b) entails only that John saw some internal portion of Bill’s crossing of the street. This is consistent with the proposal that the bracketed portion in (51a) involves (hidden) perfective aspect whereas the bracketed portion in (51b) involves (overtly signaled) imperfective aspect.

(51) a. John saw [Bill cross the street].
b. John saw [Bill crossing the street].

Now, let us look at the portion of the generalization that deals with T[PST] and T[PRES]. (52)–(53) present data similar to that provided by Wurmbrand (2011) in support of the generalization. (52) establishes that when an eventive predicate appears with T[PST], possible aspectual options include a generic/habitual interpretation (52a), an episodic interpretation with progressive aspectual morphology (52b), or an episodic interpretation with perfective aspect (52c). (53) provides the relevant minimal pairs with T[PRES] instead of T[PST]: crucially, when T[PRES] is used, an episodic interpretation with perfective aspect is ruled out (53c). The only possible way to use (53c) is on a reading where it is understood to be about the (immediate) future, and this contrasts with (53b) which is compatible both with an immediate future interpretation and a “true” present interpretation.

(52)  a. John left every morning at 7am.
    b. John was leaving right then.
    c. John left right then.

(53)  a. John leaves every morning at 7am.
    b. John is leaving right now.
    c. *John leaves right now.

The generalization that emerges from this asymmetry is that episodic eventive predicates permit the combination T[PST]/Asp[PRF] but not the combination T[PRES]/Asp[PRF]. This state of affairs is crosslinguistically not unfamiliar, although languages do differ in the details. For example, the generalization is reminiscent of constraints on the use of Greek temporo-aspectual forms as investigated recently by Giannakidou (2009). Giannakidou shows that the combination PERFECTION NONPAST differs from the other three available temporo-aspectual combinations in not being licensed on its own but rather having to be embedded under a nonveridical operator:
The ungrammaticality of (54b) on its own is reminiscent of the ungrammaticality of (53c); at the same time, however, Greek differs from English in that in English, the same form leave(s) can be rendered grammatical by a habitual or future-oriented interpretation whereas this is not the case in Greek. The conclusion seems to be that while there are crosslinguistically valid generalizations about licit combinations of tense and aspect, languages differ in how they map specific morphological forms (Greek perfective nonpast vs. English bare present) onto different temporo-aspectual interpretations.

Now let’s bring T[∅] into the picture. I use T[∅] as a notational shorthand for the Tense that obtains under SOT (‘Sequence of Tense’). In (55), for example, because there are two instances of past tense morphology in an embedding relation, two readings obtain. The non-SOT reading (55a) is one in which the lower past tense is interpreted as anterior with respect to the higher past tense. The SOT reading (55b) is one in which the lower past tense is interpreted as simultaneous with the higher tense. Although the ‘T[∅]’ terminology is associated with the ‘deletion’ approach to SOT (and more generally, the quantificational view of tense semantics) (Ogihara, 1995), there is also an anaphoronic approach to SOT (associated with the referential view of tense semantics) (Enc, 1987), and I believe that what I have to say here is in principle compatible with either approach. What is crucial is the observation that — as we will see presently — SOT-Tense patterns with T[PRES] and unlike T[PAST] with respect to permissible Tense/Aspect combinations.

(55)  Bill said that John was happy.
   a.  non-SOT reading: John’s ‘being happy’ precedes Bill’s ‘saying’.
   b.  SOT reading: John’s ‘being happy’ overlaps with Bill’s ‘saying’.

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It turns out to be important to the availability of the SOT reading of (55) that the embedded clause is stative (‘be happy’). When we turn to eventive predicates, a different pattern emerges, as noted by Wurmbrand (2011), citing earlier work by Portner (2003). In (56), only the non-SOT reading is available. In order to get an SOT reading, the eventive predicate must be ‘stativized’ either via progressive aspect (57) or via a habitual/generic interpretation (58).

(56) Bill said that John left.
   a. *non-SOT reading:* John’s ‘leaving’ precedes Bill’s ‘saying’.
   b. *SOT reading:* John’s ‘leaving’ overlaps with Bill’s ‘saying’.

(57) Bill said that John was leaving right then.
   a. *non-SOT reading:* John’s ‘leaving’ precedes Bill’s ‘saying’.
   b. *SOT reading:* John’s ‘leaving’ overlaps with Bill’s ‘saying’.

(58) Bill said that John left every morning at 7am.
   a. *non-SOT reading:* John’s ‘leaving’ precedes Bill’s ‘saying’.
   b. *SOT reading:* John’s ‘leaving’ overlaps with Bill’s ‘saying’.

We see now that with an episodic eventive predicate, just as the combination T[PRES]/Asp[PRF] is illicit, so is the combination T[∅]/Asp[PRF]. Hence in the relevant contexts, the SOT reading is filtered out so that the embedded tense is interpreted as T[PST] instead of T[∅].

An important question to ask, of course, is why these constraints on licit Tense/Aspect combinations should hold. As for the impossibility of T[PRES]/Asp[PRF], Wurmbrand (2011) suggests that this is due to a semantic conflict: in non-generic contexts, T[PRES] requires that the reference time — i.e., speech time — be included in the event time, whereas perfective aspect has the opposite requirement: that the event time be included in the reference time. The two conflicting requirements (‘reference time includes event time’ and ‘event time includes reference time’) induces
contradiction and therefore ungrammaticality. More investigation is needed here on precisely why T[PRES] has the property Wurmbrand claims it does, in contrast to T[PST]. Alternatively, Giannakidou (2009) accounts for the Greek data illustrated above by arguing that Greek nonpast tense is dependent in the sense that it cannot get its value from the context; consequently, it is ungrammatical on its own and can be saved only by being paired with imperfective aspect or by being embedded under an operator that can establish its value non-deictically (i.e., anaphorically). For my purposes, all that will matter is the fact that this constraint — and the constraint against T[∅]/Asp[PRF] — indeed hold, regardless of the reason for it.

4.4.1.2 T/Asp constraints and mono- vs. biclausality

Having investigating contraints on T/Asp combinations, we are now ready to return to the crucial minimal pair:

(59) a. John managed to leave right then.
    b. *John claimed to leave right then.

In particular, I follow Wurmbrand (2011) in supposing that (59) is explained on the view that (59a) contains no embedded Tense whereas (59b) does contain embedded Tense, as in (60).\(^5\) (59a) is grammatical because, as schematized in (60a), there is only one projection of Tense and Aspect, and it is a valid combination: T[PST]/Asp[PRF]. (59b), on the other hand, is ungrammatical. Here, there are two projections of Tense and Aspect. The higher projection is satisfied: the combination T[PST]/Asp[PRF] is licit. However, if we hypothesize that the lower projection of Tense is either T[PRES] or T[∅], then we explain its ungrammaticality. Both T[PRES]/Asp[PRF] and T[∅]/Asp[PRF] are illicit combinations.

\(^5\) I depart slightly from Wurmbrand 2011 here in that for her, manage and other predicates in its class embed AspP rather than just vP. Although this may be the case, I abstract away from this possibility here because what is crucial for accounting for the data at hand is whether there is an embedded T.
Of course, the success of this account is only as valid as the independent evidence that the lower projection of Tense in (60b) is not T[PST] but rather T[PRES] or T[∅]. In the next subsection, I present Wurmbrand’s (2011) evidence that it is indeed T[∅].

4.4.1.3 Complements to claim embed T[∅]

Having provided an argument for the presence of either T[PRS] or T[∅] in infinitival complements to claim, in this section I provide evidence that we can narrow this down to T[∅].

First, though, I provide independent support from Wurmbrand 2011 for the idea that claim does not embed infinitives with T[PST]. The argument is based on the minimal pair in (61). If (61a) involved T[PST], then we would expect it to have the same interpretation as (61b), which is contrary to fact. In (61a), the time of Mary’s pregnancy overlaps with the time of the claiming, whereas in (61b), the time of Mary’s pregnancy precedes the time of the claiming

(61) a. Mary claims to be pregnant.
   b. Mary claims that she was pregnant.

Now let’s consider T[PRS]. Wurmbrand (2011) argues that infinitival complements to claim must not involve T[PRS], because unlike present tense, they do not give rise to the so-called “double access” reading. (62a) is infelicitous because of the well-known fact that embedded present tense
is ‘absolute’: the relevant event must hold at speech time. Since five years is too long a span to remain pregnant, (62a) is nonsensical. This is in contrast to (62b), which is felicitous.

(62)  
   a. #Five years ago, Julia claimed that she is pregnant.  
   b. Five years ago, Julia claimed to be pregnant.

A second argument Wurmbrand offers against a T[PRS] analysis is that it is transparent to SOT. Thus (63a) but not (63b) has a reading in which the time of Mary’s pregnancy overlaps with the time she made the claim.

(63)  
   a. A year ago, Mary claimed to know that she was pregnant.  
   b. A year ago, Mary claimed that she knows she was pregnant.

The failure of SOT to apply between ‘claim’ and ‘be pregnant’ in (63b) is expected: it is blocked by the intervening present tense on ‘know’. The fact that this blocking does not occur in (63a) suggests that in this case, present tense is not projected.

Having eliminated both T[PST] and T[PRES], Wurmbrand proposes that infinitival complements to \textit{claim} project a semantically vacuous Tense, i.e., T[∅], the same kind of Tense that obtains when Tense is deleted under SOT. This seems to be confirmed by the fact that infinitival complements to \textit{claim} are truth-conditionally equivalent to finite complements to \textit{claim} in SOT contexts. Thus (64a) is equivalent to (64b) on its SOT (but not its shifted) reading and (65a) is equivalent to (65b) on its SOT (but not its shifted) reading.

(64)  
   a. Mary claimed to be pregnant.  
   b. Mary claimed that she was pregnant.

(65)  
   a. Mary claims to be pregnant.  
   b. Mary claims that she is pregnant.

These considerations thus support the hypothesis from above about the reason for the asymme-
try in (66). (66a) has the structure in (67a), which contains just one projection of Tense and Aspect, the licit combination T[PST]/Asp[PRF]. (66b), on the other hand, has the structure in (67b). Crucially, the lower projection of Tense and Aspect is illicit, and so the structure is ruled out. We thereby have provided independent support from temporo-aspectual interpretation for the claim that EC structures like (66a) are monoclausal whereas PC structures like (66b) are biclausal.

(66)  
   a. John managed to leave right then.  
   b. *John claimed to leave right then.

(67)  
   a. TP  
       ┌── T  
       │   △ AspP  
       │      ┌── PST√  
       │      │   Asp  
       │      │      △ FP  
       │      │          │   PRF√  
       │      │          │      │   F  
       │      │          │      │      △ vP  
       │      │          │      │          △ ...V...  
       └── manage
   b. TP  
       ┌── T  
       │   △ AspP  
       │      ┌── PST√  
       │      │   Asp  
       │      │      △ VP  
       │      │          │   PRF√  
       │      │          │      │   V  
       │      │          │      │      △ vP  
       │      │          │      │          △ ...V...  
       └── claim  

4.4.2 Posteriority

In the previous subsection, I explained why PC verbs supporting simultaneity disallow eventive predicates whereas EC predicates supporting simultaneity allow them, as evidenced by data like (68). In particular, I argued, following Wurmbrand (2011), that sentences like (68a) are ruled out because the infinitive contains a projection of T[∅], which cannot felicitously combine with perfective aspect. In (68b), on the other hand, there is only one projection of T, namely T[PST], which is licit with perfective aspect. The purpose of this subsection is to explain why this asymmetry is suspended when we look at PC (69a) and EC (69b) predicates that allow a posteriority relation. Here
we see that both PC predicates like *hope and EC predicates like want allow eventive descriptions.\(^6\)

\(\) (68) a. *John claimed to go right then.
   b. John managed to go right then.

(69) a. John hoped to go tomorrow.
   b. John wanted to go tomorrow.

My explanation for these facts will proceed in three steps. First, I will review Wurmbrand’s (2011) arguments for the view that future-oriented infinitives like those in (69) do not project Tense but rather that futurity is contributed by a modal element woll (see Abusch 1985 and many others). Adopting this conclusion, the possibility of future-orientation in a monoclausal context like (69a) is explained. Second, I will show that a tenseless projection of woll is predicted to have all the same properties as a projection of woll that includes also T[∅]. In particular, there is independent evidence that T[∅] may combine with perfective aspect as long as woll is projected as well. Therefore, by postulating T[∅] as the lower projection of Tense in sentences like (69b), we explain why the asymmetry in (68) does not obtain in (69). Finally, I will conclude this subsection by discussing in more detail the nature of woll in the context of the cartography of IP.

4.4.2.1 Wurmbrand 2011: Future-oriented infinitives do not project Tense

Wurmbrand (2011) argues that infinitives whose temporal interpretation is futurate with respect to tense of the embedding predicate do not project Tense. In making this argument, Wurmbrand

\(^6\) As discussed above, want may simulate PC by embedding \(\emptyset\)have. However, the same facts obtain even in contexts that exclude \(\emptyset\)have: Italian volere ‘want’ allows future-oriented eventive predicates even in the presence of clitic climbing:

(i) Gianni lo voleva fare domani.
    Gianni it wanted do tomorrow
    ‘Gianni wanted to do it the next day.’

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assumes following Abusch (1985) and many others that English future modals will and would are decomposable into a Tense head (T[\text{pres}] in the case of will and T[\text{past}] in the case of would) plus an abstract modal woll which contributes posteriority. With this assumption in place, Wurmbrand shows that future-oriented infinitives pattern differently from both will and would and therefore concludes that they project woll but not Tense.

Wurmbrand presents two pieces of evidence to show that future-oriented infinitives cannot be analyzed as projecting a null version of T[\text{pres}] + woll (= will). First, Wurmbrand observes, following Enç (1987) and others, that English present tense has an ‘absolute’ interpretation in the sense that even when it is embedded, it is futurate with respect to speech time: in a phenomenon known as the ‘double access’ reading, (70) requires that the time of the pregnancy hold both at the matrix ‘finding out’ time and at speech time. Crucially, Wurmbrand shows, the same phenomenon happens with will: (71a) is infelicitous because the embedded temporal adjunct yesterday places the relevant event in the past with respect to speech time whereas will requires that the event be in the future relative to speech time. But future-oriented infinitives, on the other hand, have a relative rather than an absolute interpretation: (71b–c) are felicitous.

(70) Leo found out that Mary is pregnant. \hspace{1cm} \text{(Wurmbrand 2011:8)}

(71) a. *Leo decided he will go to the party yesterday.
    b. Leo decided to go to the party yesterday.
    c. Leo wanted to go to the party yesterday.

Wurmbrand concludes from this that future-oriented predicates must not embed T[\text{pres}] + woll. If they did, then we would expect (71b–c) to pattern together with (71a) as infelicitous, contrary to fact.

Second, Wurmbrand observes following Ogihara (1996); Abusch (1997); Enç (2004) that when will intervenes between two instances of past tense, it blocks ‘sequence of tense’ (henceforth SOT) on the lower tense, whereas when a future-oriented infinitive intervenes between two instances of
past tense, it is transparent to SOT. This is illustrated in (72). In (72a), a past tense verb (*promised*) embeds a clause with *will* which embeds another past tense verb (*were*). The important observation is that this sentence does not have a reading in which the time of John telling his mother is simultaneous with the time of John and his mother having their last meal together. Rather, the meal time must be in the past relative to the telling time. This is in contrast to (72b–c) where the intermediate *will* is replaced by an infinitive. Now, a possible reading is one in which the time of the telling is simultaneous with the meal time. Thus, unlike *will* clauses, future-oriented infinitives are transparent to SOT.

(72)  

a. John promised me yesterday that he will tell his mother tomorrow that they were having their last meal together.  
\[ \rightarrow *\text{time of telling} = \text{time of meal} \]  
\[ \rightarrow \text{[PAST promise [PRES will tell [PAST meal ] ]]} \]

b. Jay promised me yesterday to tell his mother tomorrow they were having their last meal together.  
\[ \rightarrow \text{Possible reading: time of telling} = \text{time of meal} \]  
\[ \rightarrow \text{[PAST promise [will tell [PAST meal ] ]]} \]

c. Jay wanted yesterday to tell his mother tomorrow that they were having their last meal together.  
\[ \rightarrow \text{Possible reading: time of telling} = \text{time of meal} \]  
\[ \rightarrow \text{[PAST want [will tell [PAST meal ] ]]} \]

To sum up, the two foregoing observations illustrate two properties of future-oriented infinitives (namely, non-absoluteness and transparency to SOT) that set them apart from *will*-clauses and hence suggest that future-oriented infinitives do not project T[PRES] + *woll*.

As for the possibility that future-oriented infinitives project T[PAST] + *woll*, Wurmbrand offers one argument against this view. According to Wurmbrand, (73a) is ungrammatical because T[PAST]...
woll (= would) obligatorily participates in SOT. Because there is no higher instance of T[past] to trigger SOT, the result is ungrammatical. As we see in (73b–c), however, the equivalent with an infinitive in place of the would-clause is grammatical. An approach in which future-oriented infinitives project T[past] + woll would be unable to capture this asymmetry.

(73)  a. *John will promise me tonight that he would tell his mother tomorrow that…
     b. John will promise me tonight to tell his mother his mother tomorrow that…
     c. John will want tonight to tell his mother tomorrow that…

Since there is evidence against treating future-oriented infinitives as projecting T[pres] + woll or T[past] + woll, Wurmbrand concludes, it is reasonable to think that future-oriented infinitives do not project Tense at all but rather simply project woll, which contributes futurity.

4.4.2.2 Future-orientation and biclausality

The key conceptual move that Wurmbrand (2011) makes to entertain the view that future-oriented infinitives do not project Tense is that futurity is contributed not by Tense but rather by the modal element woll. As reviewed above, Wurmbrand also provides evidence that future-oriented infinitives project neither T[pres] + woll nor T[pst] + woll. However, a third possibility that Wurmbrand does not consider is that future-oriented infinitives project T[∅] + woll. Here, I will show that the facts are consistent with this possibility.

Above, I showed that T[∅], like T[pres], disallows perfective episodic eventive predicates. The evidence for this was that sentences like (74) disallow SOT, as observed by Portner (2003); Wurmbrand (2011).

(74)  Bill said that John left.

     a. non-SOT reading: John’s ‘being happy’ precedes Bill’s ‘saying’.
     b. #SOT reading: John’s ‘leaving’ overlaps with Bill’s ‘saying’.
Crucially, however, when we replace T[∅] with T[∅]+ will, we see that perfective episodic eventive predicates once again become possible. In (75), John’s leaving is in the future with respect to a time that overlaps with Bill’s saying. This overlap indicates SOT; i.e., the embedded clause projects T[∅]+ will.

(75) Bill said that John would leave.

This fact opens up the possibility that future-oriented infinitives project T[∅]+ will. Furthermore, this possibility is consistent with the data Wurmbrand uses to argue that future-oriented infinitives do not project T[PRES] + will or T[PST] + will. Turning first to T[PRES], Wurmbrand shows that future-oriented infinitives have a relative (non-absolute) interpretation and that they are transparent to SOT. Both of these properties hold for T[∅] as well, as illustrated in (76b) and (77b) respectively.

(76) a. A week ago, Leo decided to go to the party yesterday.

b. A week ago, Leo decided he would go to the party yesterday.

  ✓ T[PST] T[∅]-will

c. *A week ago, Leo decided he will go to the party yesterday.

  *T[PST] T[PRES]-will

(77) a. Jay decided yesterday to tell his mother tomorrow that they were having their last meal together.

  → Possible reading: time of telling = time of meal

b. Jay decided yesterday he would tell his mother tomorrow that they were having their last meal together.

  → Possible reading: time of telling = time of meal


c. John decided yesterday that he will tell his mother tomorrow that they were having
their last meal together.
→ *time of telling = time of meal

Wurmbrand also argues that future-oriented infinitives do not project T[PST] + will. But again, as illustrated in (78b), the facts are consistent with the view that they embed T[∅].

(78)  
a. John will promise me tonight to tell his mother his mother tomorrow that…
  b. John will promise me tonight that he will tell his mother tomorrow that…
     ✓ T[PRES]-woll promise [T[PRES]-woll tell]
  c. *John will promise me tonight that he would tell his mother tomorrow that…
     * T[PRES]-woll promise [T[∅]-woll tell]…

The lesson here is that with future-oriented infinitives, we cannot use temporal/aspectual information to diagnose the presence or absence of T, because [woll vP] has all the same relevant properties as [T[∅] woll vP].7 We therefore predict that future-oriented infinitives should be found both in monoclausal contexts and in biclausal contexts, and this is exactly what we find. EC/restructuring predicates like want achieve future-orientation with monoclausal structures like (79a), and PC/non-restructuring predicates like hope achieve future-orientation with biclausal structures like (79b).

(79)  
a. TP
   T FP
      F wollP
    want woll vP
   b. TP
      T VP
         V CP
          hope C TP
             T wollP
             woll vP

7. Wurmbrand (2011) in fact acknowledges this point: “[O]ne conclusion we can draw regarding future infinitives is that the possibility of episodic eventive predicates … does not tell us anything about tense…[E]ventive predicates cannot be used to determine whether there is tense in future infinitives” (p. 22).
Evidence for the structural difference between (79a) and (79b) must come from phenomena other than temporal/aspectual interpretation, such as the availability of finite complementation and crosslinguistic ability to restructure, as reviewed in chapter 1 above.

4.4.2.3 The nature of woll

Before closing this subsection, a few words are in order on the nature of woll in light of the cartographic approach to IP structure. The most fundamental question is whether woll is indeed a morpheme that projects in the spine of the tree, as I have been assuming above, or whether it is actually part of the meaning of the embedding predicate (as argued by Katz (2001)). Preliminary evidence in favor of the former view comes from work by Jóhannsdóttir & Matthewson (2007); Matthewson (2011) on Gitxsan (Tsimshianic family, spoken in the northern part of British Columbia, Canada). In particular, the authors argue that in Gitxsan, the particle dim is an overt realization of woll, occurring in precisely the environments where woll has been posited for languages like English. Thus it occurs in matrix contexts to indicate future tense (80a), and when embedded under past tense, it encodes relative futurity (80b). Crucially, the same particle is found embedded under root modals such as those expressing ability (80a) and obligation (80b), and it is also found in complements to want (80c). (For simplicity’s sake, I have suppressed most of the word-internal morpheme boundaries that are not relevant to the point here. See the cited works for more detailed morphological analysis and glossing.)

(80)  

a. dim yookwt James  
   \begin{tabular}{ll}  
   FUT & eat \\  
   \end{tabular}  
   James  
   ‘James will eat.’ (Matthewson 2011)

b. wilaayis noxs Bob dim wil sim’oogitt hla da sgyatt  
   know mother Bob FUT be chief when born  
   ‘When Bob was born, his mother knew he would become chief.’ (Matthewson 2011)

(81)  

a. da’akxws Henry ‘wii’nakw dim wil gost  
   \begin{tabular}{llll}  
   can & Henry high & FUT & COMP jump \\  
   \end{tabular}  

\hline
217
‘Henry can jump high.’ (Matthewson 2011)

b. sgi  **dim** ap  ha’wis  Lisa
should  **fut**  **emph**  go.home  Lisa
‘Lisa should go home.’ (Matthewson 2011)

c. Sim  **hasak’-y  dim**  algali  ahl  wiiitsxw
Really  want-1**sg**  fut  watch  **prt**  film
‘I wanted to watch the film.’ (Jóhannsdóttir & Matthewson 2007:7)

The Gitxsan data thus constrain the space of analytical options in the following way. One possibility is that universally, **woll** in future-oriented infinitives is not built into the meaning of the embedding predicates but rather projects as an independent morpheme in syntax which is overt in some languages and covert in others. (See Grano 2012 for a conclusion just like this about the crosslinguistic encoding of comparative semantics on gradable adjectives.) Another possibility is that there is crosslinguistic variation in whether **woll** is a morpheme in syntax or a part of the meaning of certain embedding predicates.

On the assumption that **woll** is (universally) a morpheme in syntax, a subsequent question to ask is whether it is part of the cartography of IP in the sense of occupying a fixed and crosslinguistically uniform position in IP or whether it is inserted freely in the structure whenever the embedding predicate or other factors demand that it contribute futurity. The former position is conceptually attractive because it could allow us to predict that an IP head can take a future-oriented complement only in case the IP head projects above **woll** in the structure. However, data like the following suggest that the latter position is empirically superior. In (82), **woll** projects both at the matrix level as part of the underlying representation of **will**, and in the infinitival complement to **want**.

(82) Tomorrow, John will want to do it the next day.

This suggests that either **woll** may be freely inserted as needed, or that it projects in more than one place in the structure of IP. I leave it to future research to adjudicate between these two approaches.
4.4.3 Anteriority

The final matter left to be explained is why EC predicates uniformly resist past-oriented complements, as shown in (83), whereas at least one PC predicate allows past-oriented complements, as shown in (84). Here the only PC predicate I consider is claim, though see also the next section on factive predicates.)

(83) a. Today, John managed to {open / have opened} the door (*yesterday).
    b. Today, John tried to {open / have opened} the door (*yesterday).
    c. Today, John started to {open / have opened} the door (*yesterday).
    d. Today, John had to {open / have opened} the door (*yesterday).
    e. Today, John wanted to {open / have opened} the door (*yesterday).

(84) Today, John claimed to have opened the door yesterday.

The explanation that I propose for this split is that past-orientation in infinitival complements is contributed by a special use of perfect have that is temporal in meaning and hence obligatorily licensed by Tense. Since EC instantiates a monoclausal structure, there is no place for an embedded Tense projection, as in (85a). But PC instantiates a biclausal structure, so embedded Tense projects and can license have, as in (85b).

(85) a. 

8. The parenthetical yesterday in the examples in (83) may become acceptable in a fantasy context where we grant the possibility of John being able to manipulate the past, as in (ia). However, once we consider such contexts, conflicting temporal modifiers become possible even in uncontroversially monoclausal examples like (ib). Therefore, (ia) does not threaten my appeal below to monoclausality in explaining the unavailability of conflicting temporal modifiers.

(i) a. (Using his time machine,) today John managed to open the door yesterday.
    b. (Using his time machine,) today John opened the door yesterday.
As discussed above, I follow Landau (2000) in thinking that infinitival *have* is ambiguous between a perfect interpretation and a true past interpretation. On the perfect interpretation, illustrated in (86a), it is available in EC structures, presumably as part of the extended projection of *v*P. Crucially, though, inserting a time adverbial that conflicts with matrix tense forces a true past interpretation, and when this is done, we see that only PC predicates like *claim* and not EC predicates like *manage* support ‘true past’ *have* in their infinitival complements.

(86)  

a. Earlier today, John managed to have closed the window before it got too cold.

b. *Earlier today, John managed to have opened the door yesterday.

c. Earlier today, John claimed to have opened the door yesterday.

In what follows, I provide independent evidence that ‘true past’ *have* as found in (86c) systematically patterns like finite past tense -*ed* and unlike finite present perfect *have …-en*, thus providing independent support for the idea that this use of *have* is special in being licensed by Tense.

Kiparsky (2002), building on earlier seminal work by McCawley (1971); McCoard (1978); Mittwoch (1988); Klein (1992) and others, discusses a number of readings associated with the English perfect, including existential, universal, and resultative readings. To paraphrase Kiparsky:

---

9. Kiparsky also mentions the recent past reading, which I will not discuss here because Kiparsky ultimately subsumes it under the resultative reading, and the stative present reading, which I will not discuss here because (at least in English) it is confined to the possessive construction *have got*.
The existential reading, as in (87a), is used to assert the occurrence of one or more instances of an event over an interval beginning at some point in the past and extending up to the reference time (and by implicature, not occurring at the reference time itself). The universal reading, as in (87b), is used to assert that a single contiguous event holds over an interval beginning at some point in the past and extending up to and including the reference time. Finally, the resultative reading, as in (87c), is limited to accomplishments and achievements, and is used to assert that the relevant change of state occurred somewhere in between some point in the past and the reference time.

(87)  
   a. Fred has visited Paris several times.                          existential  
   b. I have known him since 1960.                                 universal  
   c. The police have probably caught the suspect by now.          resultative

These readings are subject to interesting restrictions which I will now show do not arise in the context of infinitival have.

First, Kiparsky shows that the existential reading comes with a presupposition that “a recurrence of the event type in question is possible” (p. 4). Thus (88) is infelicitous, since being born is something that can only happen once. This infelicity is preserved when (finite) present perfect is embedded under claim, but note crucially that infinitival have under claim (88b) patterns with the finite past tense (88c) in being felicitous.

(88)  
   #Fred has been born in Paris.

(89)  
   a. #John claims that he has been born in Paris.
   b. John claims to have been born in Paris.
   c. John claims that he was born in Paris.

Second, Kiparsky recalls the ‘present perfect puzzle’ (Klein, 1992): as shown in (90a), the present perfect cannot be used with a point-denoting time adverbial, in contrast with the past perfect,
as in (90b). As before, the restriction is preserved with finite present perfect under claim (91a), but suspended with infinitival have (91b), which patterns with past tense in not having this restriction (91c).

(90) a. #The convict has escaped at 3.
    b. The convict had escaped at 3.

(91) a. #John claims that he has escaped at 3.
    b. John claims to have escaped at 3.
    c. John claims that he escaped at 3.

Third, recalling an observation attributed to Declerck (1991), Kiparsky presents the ‘sequence of tense puzzle’: the resultative reading cannot trigger SOT on an embedded past tense (92a), whereas the universal and existential readings can (92b–c). As expected, this restriction extends to finite present perfect under claim (93a), but not to infinitival have (93b), which patterns like finite past tense -ed (93c).

(92) a. #I have finally realized that the earth was round.  
    b. I have always known that the earth was round.  
    c. I have often thought that the earth was round.  

(93) a. #John claims that he has finally realized that the earth was round.
    b. John claims to have finally realized that the earth was round.
    c. John claims that he finally realized that the earth was round.

Fourth and finally, Kiparsky attributes the ‘Wh-puzzle’ to Michaelis (1994): the resultative reading is unavailable with adverbial wh-questions unless the adverbial “relates to the result state”. Thus in (94a), the resultative reading is available because with hide, the location adverbial “specif[ies] a property of the result state”, but in (94b), the resultative reading is unavailable be-
cause with *find*, the location adverbial merely “specif[ies] a property that obtains at the time when the activity leading up to it terminates” (p. 17). The facts with *claim* pattern as before: finite present perfect preserves this restriction (95a), whereas infinitival *have* (95b) and finite past tense (95c) do not.

(94)  
a. Where have you hidden my watch? (RESULTATIVE reading available)  
b. Where have you found my watch? (EXISTENTIAL reading only)  

(95)  
a. Where did John claim that he has found my watch? (EXISTENTIAL reading only)  
b. Where did John claim to have found my watch? (RESULTATIVE reading available)  
c. Where did John claim that he found my watch? (RESULTATIVE reading available)  

Taken together, all of these facts strongly suggest that infinitival *have* as found under *claim* — although homophonous with perfect *have* — patterns with finite past tense -ed in its semantics. This reinforces my proposal that it is obligatorily licensed by Tense, and this is why past-orientation as contributed by *have* is contingent on embedded Tense, and by extension, contingent on biclausality.

4.5 Extending the analysis to factive predicates

In this section, I bring factive infinitives into the picture. My reason for having left them out of the main discussion is that they have some particularly complicated and poorly understood properties; consequently, my remarks here will be somewhat tentative and meant primarily to spark further research in this largely unexplored area.\(^\text{10}\)

The first matter that must be contended with in an investigation of factive infinitives is why they are generally found only as complements to adjectives and not as complements to verbs. Observe the puzzle in (96)–(97): although the verbal factive predicate *regret* and the adjectival factive predicate *be sorry* can both embed finite complements, when we turn to nonfinite complements,\(^\text{10}\) Wurmbrand (2011) in fact explicitly sets factive infinitives aside because “the empirical facts appear to be rather unstable” (p. 31, note 24).

\(^{10}\)
we see that *regret* requires a gerund whereas *be sorry* requires an infinitive.

(96)  
   a. Jay regretted [that he moved to IL].  
   b. Jay regretted [moving to IL].  
   c. *Jay regretted [to move to IL].

(97)  
   a. Jay was sorry [that he moved to IL].  
   b. *Jay was sorry [moving to IL].  
   c. Jay was sorry [to move to IL].

The theoretical literature has been slow to acknowledge the oddness of infinitival complements to factive verbs; we find allegedly grammatical examples like (98a–c) in Pesetsky 1992; Bošković 1997. But more recently, Wurmbrand (2006) reports ungrammaticality with *regret* and variation in acceptability with *love*.

(98) Judgments as reported in original:
   a. Bill hated to learn about the defeat.  
      Pesetsky 1992:111
   b. Sue loved to ride in the back seat yesterday.  
      Pesetsky 1992:111
   c. John hated to win the championship last year.  
      Bošković 1997:13
   d. *John regrets to have visited Bill.  
      Wurmbrand 2006:18
   e. %John loved to ride in the back seat yesterday.  
      Wurmbrand 2006:18

I suspect that part of the reason for the variation in reported acceptability is that — as explored in detail in Grano 2009 — there is a small class of emotive factive verbs including *like, love, and hate* that allow infinitival complements just in case the matrix has a generic/habitual interpretation:

(99)  
   a. In general, John liked {watching / to watch} television.  
   b. Yesterday evening, John liked {watching / #to watch} television.  
      Grano 2009:1

Consequently, examples from the literature like (98a–c) and (98e) may become acceptable if ‘coerced’ into a generic/habitual interpretation. As far as I know, Portner 1997 contains the only published attempt at a theoretical account of the interaction between genericity and the acceptability of factive infinitives. But because Portner’s account relies on general assumptions about the
semantics of infinitives and about the semantics of factive verbs, it runs the risk of erroneously predicting that all factive verbs should allow infinitival complements in generic contexts, contrary to fact:¹¹

(100)  a. In general, John \{liked/loved/hated\} to watch television.

 b. #In general, John \{regretted/enjoyed/abhorred/appreciated/detested/disliked/dug\} to watch television.

In light of the lexically specific nature of this phenomenon, it seems likely that the factive predicates *like, love* and *hate* have homophonous counterparts which are not factive but are rather aspectual (conveying a tendency or habit), albeit a special kind of aspectuality that has an attitudinal component. (And in fact, a hybrid aspect/attitude semantics has been proposed for *try* as well: see Sharvit 2003; Grano 2011.) Hence these uses of *like, love* and *hate* do not counterexemplify the generalization that factive verbs disallow infinitival complements.

Setting aside *like, love* and *hate*, why should the verb/adjective category difference in factive predicates track a gerund/infinitive split in their complements? One possibility is that this split reflects two underlying sources of factivity. If we follow Kiparsky & Kiparsky (1970) in thinking that factivity is contributed by a silent noun *fact*, then we might understand the asymmetry in (101) as tracking independently detectable constraints on complements to the overt noun *fact*, as in (102):

(101)  a. Jay regretted [that he moved to IL].

 b. Jay regretted [moving to IL].

 c. *Jay regretted [to move to IL].

(102)  a. Jay regretted the fact [that he moved to IL].

¹¹ To be fair, Portner (1997) proposes that “factive verbs which allow for-infinitives in this way actually denote attitudes toward situations” (p. 204, bolding added). Hence *regret, enjoy*, etc. are (trivially) not in this class. But unless there is any independent reason to believe that these other verbs depart from *like* and its kin in denoting attitudes toward situations, the bolded portion of this proposal begs the question.
b. Jay regretted the fact [of moving to IL].

c. *Jay regretted the fact [to move to IL].

If this is on the right track, then factive adjectives like sorry as in (103) must have some other analysis. One possibility, adopting a proposal by Quer (1998), is that factivity here involves a hidden causative structure whereby the complement to the adjective is negated and mapped onto the antecedent of a counterfactual conditional, as in (104). Since counterfactual conditionals presuppose the falsity of their antecedent, this would preserve the factive/presuppositional nature of this construction. The idea would then be that because gerunds are more “nominal”, they do not have the (right kind of) propositional semantics to serve as conditional antecedents, and so either a finite clause (103a) or a controlled infinitival clause (103c) is required instead. This has the interesting result that in English, the verb/adjective category distinction tracks a semantic distinction in how factivity comes about. In other languages such as the Romance languages, however, the equivalents of factive adjectives happy and surprised are expressed via verbs, so the state of affairs in English would be a language-specific quirk.12

(103) a. Jay was sorry [that he moved to IL].

b. *Jay was sorry [moving to IL].

c. Jay was sorry [to move to IL].

(104) If Jay hadn’t moved to IL, he wouldn’t be sorry.

In any case, in investigating the temporal semantics of factive infinitives, it seems prudent to focus on adjectival rather than verbal embedders, since this is where factive infinitives appear. (See chapter 1, note 11 above and Pires 2001 for more on gerunds.) An adjective like happy appears

12. A much simpler explanation for this split is that (a) gerunds require case and (b) adjectives cannot assign case. Although attractive for explaining the unavailability of gerundive complements to factive adjectives, this line of reasoning does not seem to help us explain why factive verbs pattern in the opposite way.
to be able to combine with infinitives expressing any of the three temporal relations: in (105a), Jay’s happiness overlaps with his state of being tall; in (105b), Jay’s happiness follows his having gotten a B, and in (105c), Jay’s happiness (to the extent that matrix present tense entails a current emotional state) precedes his (potential) act of helping. However, (105c) is not really a factive use of happy since it does not presuppose the fact of helping, futurate or otherwise. Indeed, not all factive adjectives support this futurate use, as we see in (106c).

(105) a. Jay is happy to be tall. 
    b. Jay is happy to have gotten a B. 
    c. Jay is happy to help you. 

(106) a. Jay is unhappy to be tall. 
    b. Jay is unhappy to have gotten a B. 
    c. #Jay is unhappy to help you. 

The data in (107)–(108) indicate that factive adjectives pattern just like claim in disallowing bare episodic eventive predicates, requiring instead aspectual have for past orientation or a stative predicate for simultaneous orientation.

(107) a. Jay claims [that he got a B]. 
    b. *Jay claims [to get a B]. 
    c. Jay claims [to have gotten a B]. 
    d. Jay claims [to be tall]. 
(108) a. Jay is happy [that he got a B]. 
    b. *Jay is happy [to get a B]. 
    c. Jay is happy [to have gotten a B]. 
    d. Jay is happy [to be tall]. 

This parallel is fully expected: in the account developed in this dissertation, factive predicates pattern with propositional predicates in instantiating biclausal structures. Just as the facts in (107) can be explained by appealing to restrictions on the Tense projection that claim embeds, so the facts in (108) can be explained on the same grounds. Furthermore, it was argued above that infinitival

13. (i) poses what at first looks like a counterexample in that it has a reading in which the seeing
*have* is contingent on the presence of embedded Tense, so the fact that we find infinitival *have* under factive adjectives reinforces the proposal that factive predicates instantiate biclausal structures.

Mysteriously, however, when we change the matrix tense from present to past, the facts change:

\[(109)\]
\[
\begin{align*}
a. & \text{Jay claimed [that he got a B].} \\
b. & *\text{Jay claimed [to get a B].} \\
c. & \text{Jay claimed [to have gotten a B].}
\end{align*}
\]

\[(110)\]
\[
\begin{align*}
a. & \text{Jay was happy [that he got a B].} \\
b. & \text{Jay was happy [to get a B].} \\
c. & \text{Jay was happy [to have gotten a B].}
\end{align*}
\]

Now, for some reason, infinitival *have* is not needed to yield past orientation in complements to the factive adjective *happy*: the most natural reading of (110b) is one in which Jay’s getting a B precedes his being happy. But although (110b) and (110c) both seem to involve past orientation, they are not synonymous. Observe the asymmetries in (111)–(112).

\[(111)\]
\[
\begin{align*}
a. & \text{Yesterday, John was happy to have gotten a B on his exam the day before.} \\
b. & \#\text{Yesterday, John was happy to get a B on his exam the day before.}
\end{align*}
\]

\[(112)\]
\[
\text{At first Jay was upset about his B, but then he slept on it and the next day he was happy to get / to have gotten a B.}
\]

What these data suggest is that infinitival *have* can be omitted just in case the temporal gap between

\[\text{precedes the being happy, despite the episodic nature of the seeing.}\]

(i) I’m happy to see you.

However, this is not actually a problem: recall that the explanation for the ungrammaticality of bare episodic eventive predicates under certain conditions relates to similar restrictions that we find in matrix present-tense contexts. As expected, the split in (ii) tracks the split in (iii). Apparently, *see* patterns with stative predicates in being admissible in these kinds of contexts.

\[(ii)\]
\[
\begin{align*}
a. & \text{Jay is happy to get a B. (* unless generic)} \\
b. & \text{Jay is happy to see you. (episodic okay)}
\end{align*}
\]

\[(iii)\]
\[
\begin{align*}
a. & \text{I get a B. (* unless generic)} \\
b. & \text{I see you. (episodic okay)}
\end{align*}
\]
the matrix emotional reaction and the infinitival state of affairs is small. This kind of temporal semantics is reminiscent of ‘retrospective aspect’ as explored by Cinque (1999), found for example in French *venir de* ‘come from’, Spanish/Portuguese *acabar de* ‘finish from’ and English adverb *just*:

(113)  
   a. *Je viens* d’arriver.  
     Lit.: ‘I come from arriving.’  
     FRENCH  
   b. *Acabo* de chegar.  
     Lit.: ‘(I) finish from arriving.’  
     PORTUGUESE  
   c. I’ve *just* arrived.  
     (Cinque 1999:96)

Hence a possible analysis for a sentence like (114a) is as in (114b), wherein the lower clause contains a silent projection of $\text{Asp}_{\text{retrospective}}$. If this is on the right track, it leaves us with two important questions. First, why is this embedded projection of $\text{Asp}_{\text{retrospective}}$ allowed only when the matrix tense is past ((115a) vs. (115b))? Second, why is it allowed only for factive predicates and not for the propositional predicate *claim* ((115a) vs. (115c))? Having laid out the facts and a possible solution, I will leave a fuller exploration of these matters to future work.

(114)  
   a. John was happy to get an A.
(115) a. John was happy to get an A.

b. *John is happy get an A.

c. *John claimed to get an A.

4.6 Conclusion

The primary goal of this chapter was to review the literature on the syntax and semantics of infinitival tense and to consider how the relevant facts fit with my overarching proposal that Exhaustive Control predicates instantiate monoclausal structures whereas Partial Control predicates instantiate biclausal structures. In this connection, there are three main conclusions. First, both EC and PC predicates are correctly predicted to allow simultaneous-oriented infinitives. For EC, this is achieved via complementation of $vP$, and for PC, this is achieved via complementation of a CP whose Tense is specified as $T[\emptyset]$, i.e., the same tense value that obtains in ‘sequence of tense’ con-
texts. We also correctly predict that simultaneous-oriented infinitival complements to PC predicates exhibit special restrictions (in particular, barring perfective episodic eventive predicates): this is attributable to the embedded Tense which is found in PC but not EC contexts. Second, both EC and PC predicates are correctly predicted to allow future-oriented infinitives (cf. Landau 2000, who argues that EC structures uniformly disallow future-oriented infinitives). For EC, this is achieved via complementation of complementation of $woll_P$, and for PC, this is achieved via complementation of $T[\emptyset]$-$woll_P$. Finally, we correctly predict that only PC structures allow for past-oriented infinitives: past orientation is contingent on an embedded projection of Tense, which for infinitives is obligatorily licensed by $have$.

In addition to reaching these conclusions, this chapter has identified three main areas for further investigation in the analysis of infinitival tense. The first question has to do with temporal modification in modal structures. Landau (2000) presents data like (116a) in support of the view that infinitival complements to modals are obligatorily interpreted as simultaneous with matrix tense. However, I demonstrated with data like (116b–c) that if the matrix temporal modifier is removed, it is possible for there to be a ‘mismatch’ between the matrix tense and an embedded temporal modifier. I suggested two possible approaches for explaining the asymmetry between (116a) and (116b–c), one that attributes the asymmetry to an interaction between modal temporal modification and actuality entailments, and one that attributes the asymmetry to a general (and as yet unexplained) ban on overt temporal modification of modals. Further research is needed in testing these hypotheses.

(116)  a. *Yesterday, John had to solve the problem tomorrow. (Landau 2000:57)
     b. (When I asked to see the manager,) they told me I had to come back tomorrow.
     c. I have to leave tomorrow.

Another outstanding question has to do with the nature of the abstract future morpheme $woll$ posited by Wurmbrand (2011) — following much previous work on the syntax and semantics of
the future — in the analysis of future-oriented infinitives. As discussed above, Jóhannsdóttir & Matthewson (2007); Matthewson (2011) have argued that in Gitxsan, woll is realized overtly as dim. If this is on the right track, then it suggests that woll does indeed project in syntax, and the remaining question is what constrains its distribution: is it freely inserted whenever needed, or does it occupy one or more fixed positions in Cinque’s (1999; 2006) proposed universal IP structure?

The final remaining area for further investigation has to do with the syntax and semantics of tense in infinitival complements to factive predicates. I identified two open questions. First, why is it that (at least in English) factive verbs tend to require gerundive complements whereas factive adjectives tend to require infinitival complements? Second, I discussed what is to my knowledge a previously unrecognized two-part puzzle in the temporal interpretation of factive infinitives. As shown in (117), perfective episodic eventive infinitives are licit under a matrix past-tense factive predicate (117a) but not under a matrix-present tense factive predicate (117b) or under a propositional predicate (regardless of matrix tense) (117c).

(117) a. John was happy to get an A just now.
    b. *John is happy get an A just now.
    c. *John claimed/claims to get an A just now.

Above I suggested that the proper analysis of (117a) involves an embedded Asp_{retrospective} projection, which captures the right temporal relation between the matrix and embedded material (a relation in which the embedded event immediately precedes the matrix event). If this is correct, then the next step is to investigate why this projection is unavailable in contexts like (117b) and (117c).
CHAPTER 5
CONTROL AND RESTRUCTURING IN MANDARIN CHINESE

5.1 Introduction

The first four chapters of this dissertation were concerned with establishing a new framework for understanding the syntax and semantics of those predicates standardly classified as ‘subject control’ predicates. I take as my goal for the remaining two chapters to apply this framework to two languages that are typologically quite distinct from English in the way their grammars treat embedded verbal projections: Mandarin Chinese and modern Greek. Whereas English embedded verbal projections come in both finite and nonfinite varieties, Mandarin clauses are uniformly not (at least in their overt morphosyntax) marked for tense or agreement, and at the other extreme, Greek clauses appear to encode tense, aspect and agreement in all contexts, even when embedded. Like English, however, Mandarin and Greek (arguably) fail to evidence classic restructuring effects, which in this dissertation have been crucial sources of crosslinguistic support for my core analysis. Consequently, Mandarin and Greek pose interesting challenges for my central claim that a subset of the so-called subject control predicates actually instantiate a monoclausal raising syntax, and my goal is to nonetheless show that Mandarin and Greek actually constitute further support for this claim: not only are they amenable to such an analysis, but they are also in fact better explained by such an analysis than by currently available alternative approaches.


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1. To be precise, J. Lin (2010) adopts a hedged version of the negative view: Mandarin possibly lacks a finite/nonfinite distinction.
turns out, most of the empirical phenomena that have figured in this debate are also extremely relevant in testing my own core proposal that a subset of the so-called ‘complement control’ structures (the Exhaustive Control class) is actually monoclausal: these phenomena include the distribution and interpretation of embedded subjects, the availability of embedded modal and aspectual morphemes, polarity licensing and focus movement, and a handful of other alleged diagnostics for a finite/nonfinite distinction (such as clitic climbing and long-distance passivization) which can easily be reinterpreted as reflecting a monoclausal/biclausal distinction rather than a finite/nonfinite distinction. Advocates of the affirmative view maintain that these phenomena evidence splits that are most naturally explained by positing a finite/nonfinite distinction, while advocates of the negative view counterargue that all of the supposed splits incur counterexamples that undermine the basis for such a distinction.

My own position will end up being somewhat hybrid between these two viewpoints. I side with the affirmative viewpoint in maintaining that the data evidence splits which (although subject to important counterexamples) require a syntactic explanation. I side with the negative viewpoint, however, in maintaining that because Mandarin morphosyntax does not make overt distinctions in tense and agreement, positing a finite/nonfinite distinction should be avoided at all costs. The resolution of this tension is in my core proposal that so-called ‘subject control’ comes in two varieties, one instantiating biclausal control as on the traditional view but the other instantiating monoclausal raising. I will argue that those splits that have in previous literature been explained by appealing to a finite/nonfinite distinction can be better explained by appealing to a biclausal/monoclausal distinction. In other words, we can explain all the facts without appealing to a distinction which is otherwise unmotivated (finite vs. nonfinite) but instead by appealing to a distinction which to my

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2. Whether or not Mandarin clauses projects a (possibly always null) Tense node is an issue that is distinct from but related to the question of (non)finiteness. Taking (non)finiteness to be a property of (Agr and) T, the existence of a T node in a language would seem to be a necessary but not a sufficient condition for a finite/nonfinite distinction. For the view that Mandarin lacks a T node, see J. Lin 2002, 2003, 2006, 2010; for works that assume, rely on or explicitly argue for a T or Infl node in Mandarin, see Ernst 1994b; Gasde & Paul 1996; Simpson & Wu 2002; Paul 2005; Sybesma 2007; T.-H. J. Lin 2007; Grano 2012.
knowledge is universally uncontroversial among scholars of Chinese syntax (monoclausal vs. bi-
clausal). An interesting implication of this proposal is that for Mandarin, we can dispense entirely
with PRO: unexpressed subjects in embedded verbal projections are always either the result of
movement (for the monoclausal class) or the freely interpretable pro (for the biclausal class).

The organization for the rest of this chapter is as follows. Section 2 establishes a set of verbal-
projection-embedding predicates organized by semantic class which will form the basis for the in-
vestigation. Section 3 investigates the distribution and interpretation of embedded subjects, show-
ing that the basic facts support my functional restructuring approach to exhaustive control and also
commenting on some relevant outstanding questions. Section 4 investigates the distribution and
interpretation of embedded modal and aspectual morphemes. Section 5 discusses the role of po-
ularity licensing and focus movement as possible diagnostics for monoclausality. Section 6 reviews
and evaluates other less central phenomena that have figured in the debate over whether Mandarin
has a finite/nonfinite distinction. Finally, section 7 concludes.

5.2 Relevant classes of predicates

As an initial delimitation of the empirical scope of the chapter, (1)–(2) lists some representa-
tive verbal-projection-embedding predicates found in Mandarin, organized according to Landau’s
(2000) semantic classification of control predicates (though augmented to include a try class, not
used by Landau). At this point, I am not claiming anything about the syntax of these predicates,
but only predicting how they behave based on their meaning in conjunction with crosslinguistic
patterning. In fact, we will see below that while the predicted patterning for the most part bear out,
the predicates dasuan ‘plan’ and zhunbei ‘decide’, classified here under the desiderative subtype
of the Partial Control class, actually pattern with the Exhaustive Control class, and are thus perhaps
better analyzed as being in the try class. I also include here in (3) a list of typical ‘object control’
predicates because although object control is not central to this dissertation, these predicates have
been frequently used in the literature on Mandarin control and will hence show up in much of the
data discussed in this chapter.

(1) Predicted to be ‘Exhaustive Control’ / Monoclausal raising
   a. **Modal:** bixu ‘must’, dei ‘must’/‘have (to)’, hui ‘will’/‘be able’, neng ‘can’/‘be able’, yinggai ‘should’
   b. **Aspectual:** jieshu ‘finish’, jixu ‘continue’, kaishi ‘start’, tingzhi ‘stop’
   c. **Implicative:** deyi ‘manage’, gan ‘dare’
   d. **Try:** changshi ‘attempt’, qitu ‘attempt’, shefa ‘try’

(2) Predicted to be ‘Partial Control’ / Biclausal control
   b. **Factive:** gaoxing ‘(be) happy’, jide ‘remember’, jingya ‘(be) surprised’, nanguo ‘(be) sad’, yihan ‘regret’
   c. **Desiderative:** dasuan ‘plan’, jueding ‘decide’, xiangyao ‘want’, xiwang ‘hope’, zhunbei ‘prepare’
   d. **Interrogative:** xiang zhidao ‘want to know (= wonder)’, wen ‘ask’

(3) **Object control:** bi ‘(try to) force’, bipo ‘force’, jiao ‘order’, pai ‘send’, qing ‘ask’/‘invite’, quan ‘urge’, tuo ‘request’

The rest of this chapter will be concerned with the syntax of these predicates. In most cases, I will apply syntactic diagnostics only to a few of the predicates from each of these three sets. The prediction, though, is that the behavior of the individual predicates is illustrative of the behavior of the rest of the predicates in its class, modulo semantic and pragmatic factors that may militate against the use of particular predicates in certain contexts.
5.3 The distribution and interpretation of embedded subjects

5.3.1 The basic empirical split and the core analysis

According to many researchers, Mandarin verbal-projection-embedding predicates can be divided into two classes depending on whether they allow or disallow an overt embedded subject in their complement. (See Huang 1982, 1987, 1989; Li 1985, 1990; C.C. Tang 1990; Jiang 1991; Ernst 1994b; T.C. Tang 2000. This view has also been disputed by Hu et al. 2001; Xu 2003; Lin 2010 for reasons that I will discuss later in this section.) The following data, taking one example from each of the semantic classes of predicates identified in the previous section, suggest that this division largely tracks Landau’s (2000) classification of predicates into EC and PC types: those predicates that fall into the PC semantic classes (what I will call the renwei [= ‘believe’ ]-class) allow overt embedded subjects while those predicates that fall into the EC semantic classes (what I will call the shefa [= ‘try’ ]-class) disallow overt embedded subjects.

(4) a. zhangsan renwei lisi chi le fan.
   ‘Zhangsan believes that Lisi ate.’
   PROPOSITIONAL

   b. zhangsan xiangyao lisi chi fan.
   ‘Zhangsan wants Lisi to eat.’
   DESIDERATIVE

   c. zhangsan hen yihan lisi chi le fan.
   ‘Zhangsan regrets that Lisi ate.’
   FACTIVE

   d. zhangsan xiang zhidao lisi you mei-you chi fan.
   ‘Zhangsan wonders whether Lisi ate.’
   INTERROGATIVE

(5) a. zhangsan kaishi (*lisi) chi fan.
   ‘Zhangsan began to eat.’
   ASPECTUAL

   b. zhangsan hui (*lisi) chi fan.
      ‘Zhangsan could eat.’
Given this state of affairs, the central hypothesis of this chapter is that these predicates instantiate the same structures that I have proposed for the semantically corresponding equivalents in English: the shefa-class has a monoclausal raising analysis (6), whereas the renwei-class has a biclausal analysis (7).

The goal of the rest of this chapter is to show how data that has been traditionally taken to bear on the existence of a finite/nonfinite distinction in Mandarin can be reinterpreted as reflecting the monoclausal/biclausal split in (6)–(7). First, however, the rest of this section discusses some predictions and complications regarding the distribution and interpretation of embedded subjects for each of the two classes.

5.3.2 Predictions and complications for the renwei-class

In analyzing the renwei-class as involving a biclausal structure whose embedded clause contains an independent subject, we make the prediction that, since Mandarin is a pro-drop language (Huang, 1984, 1989), predicates in the renwei-class should allow a null subject that is optionally coreferential with the matrix argument. For the most part, this prediction is borne out. In (8), for example,
the unexpressed subject of the embedded clause can either be coreferential with the matrix subject, or refer to some other entity known from the context. As we see in (9), the same state of affairs holds if the unexpressed subject is replaced by the overt third-person pronoun \( ta \).

(8) Zhangsan, shuo \([\Delta_{i/j} \text{ hen } xihuan Lisi}\].
    Zhangsan say very like Lisi
    ‘Zhangsan said that he liked Lisi.’ (Huang 1989:187)

(9) Zhangsan, shuo \([ta_{i/j} \text{ hen } xihuan Lisi}\].
    Zhangsan say he very like Lisi
    ‘Zhangsan said that he liked Lisi.’

Interestingly, however, \textit{xiangyao} ‘want’ constitutes an exception to this generalization, as we see in (10). With \textit{xiangyao}, a disjoint interpretation for the embedded subject requires an overt form. This fact about \textit{xiangyao} is brought out by the minimal pair in (11), due to Jiang (1991). In (11a), the first sentence sets up the context so that in the second sentence, the referent of the embedded subject is \textit{Lisi}. \textit{Lisi} can be referred to either with the overt pronoun \( ta \) or with a null form. In (11b), the first sentence again sets up the context so that the referent of the embedded subject in the second sentence is \textit{Lisi}. Here, though, \textit{Lisi} must be referred to with the overt pronoun \( ta \); a null form can only be construed as referring to the local matrix subject.

(10) zhangsan, xiangyao \( \Delta_{i/j} \) likai.
    Zhangsan want leave
    ‘Zhangsan wants to leave.’

    NOT: ‘Zhangsan wants him to leave.’

(11) a. zhangsan renwei lisi qu kan-le wangwu. zhaoliu renwei (ta) mei qu.
    Zhangsan believe Lisi go see-\textit{PRF} Wangwu Zhaoliu believe he no\textit{PRF} go
    ‘Zhangsan thinks that Lisi has gone to see Wangwu. Zhaoliu thinks he hasn’t.’

b. zhangsan bu xihuan lisi. zhangsan xiangyao ta/*\( \Delta \) likai shanghai.
    Zhangsan not like Lisi Zhangsan want he leave Shanghai
    ‘Zhangsan does not like Lisi. He wants him to leave Shanghai.’ (Jiang 1991:183)
Although I do not have an explanation for this fact about xiangyao, the framework entertained here does provide the foundation for one. In particular, chapter 3 above argued that want and its crosslinguistic equivalents, despite surface appearances, are underlyingly EC/monoclausal predicates, and take on PC/biclausal properties only by concealing the null verb $\emptyset_{have}$. Thus whereas the second sentence in (11a) has the structure in (12), the second sentence in (11b) has the structure in (13). This allows us to tie the asymmetry to independent syntactic properties of pro: it can appear in the subject position of a CP complement to a verb, but it cannot appear in the subject position of a vP complement to $\emptyset_{have}$. Consequently, the only way to parse the second sentence in (11b) is as indicated in (14): a monoclausal raising structure whereby identity between the subject of xiangyao ‘want’ and the subject of likai ‘leave’ is guaranteed.

(12)  
\[ \text{zhao liu} \quad \text{VP} \]  
\[ \text{V} \quad \text{CP} \]  
\[ \text{ren wei} \quad \text{ta/pro mei qu} \]

(13)  
\[ \text{zhang san}_1 \quad \text{FP} \]  
\[ \text{F} \quad \text{VP} \]  
\[ \text{xiangyao} \quad \text{zhang san}_1 \quad \text{V'} \]  
\[ \emptyset_{have} \quad \text{vP} \quad \text{ta/pro likai shanghai} \]
5.3.3 Predictions and complications for the shefa-class

Aside from the ungrammaticality of overt embedded subjects as illustrated above, more support for the monoclausal raising approach to the shefa-class comes from the failure of this class to support Partial Control, in contrast to what we find with the renwei-class. (15) illustrates the ungrammaticality of Partial Control with the shefa-class, using the Mandarin equivalents of the collective predicates ‘eat together’, ‘gather at 12’, and ‘meet at 12’. In (16), we see in contrast that xiwang ‘hope’, which is a member of the renwei-class, does support Partial Control.

(15) a. *zhangsan shefa yikuai chi fan.
   Zhangsan try together eat food
   ‘Zhangsan tried to eat together.’

b. *zhangsan shefa shi’er dian jihe.
   Zhangsan try twelve o’clock gather
   ‘Zhangsan tried to gather at 12.’

c. *zhangsan shefa shi’er dian jianmian.
   Zhangsan try twelve o’clock meet
   ‘Zhangsan tried to meet at 12.’

(16) a. zhangsan xiwang yikuai chi fan.
   Zhangsan hope together eat food
   ‘Zhangsan hopes to eat lunch together.’

b. zhangsan xiwang shi’er dian jihe.
   Zhangsan hope twelve o’clock gather
   ‘Zhangsan hopes to gather at 12.’

c. zhangsan xiwang shi’er dian jianmian.
   Zhangsan hope twelve o’clock meet
‘Zhangsan hopes to meet at 12.’

However, some other considerations appear to challenge the monoclausal raising approach to the shefa-class. In particular, Hu et al. (2001) dispute the claim that Mandarin has predicates that disallow overt embedded subjects, citing data that I will classify into two groups for presentation and discussion. The first group is shown in (18). The crucial point is that the predicates exemplified here, while normally not allowing for overt embedded subjects, as evidenced by (17), appear to have this restriction suspended in (18). What accounts for this suspension? The data in (18) exhibits two salient properties. First, the complement begins with an adverbial phrase. Second, the overt embedded subject (bolded in these examples) is pronominal and anaphoric to an argument of the matrix predicate.

(17) a. wo z Chunpei (*ta) lai.
   I prepare he come
   ‘I plan to come.’

b. wo quan zhangsan (*lisi) lai.
   I persuade Zhangsan Lisi come
   ‘I persuaded Zhangsan to come.’

c. wo shefa (*ta) lai.
   I try he come
   ‘I tried to come.’

d. wo bi ta (*zhangsan) lai.
   I force he Zhangsan come
   ‘I forced him to come.’

e. wo jiao zhangsan (*lisi) lai.
   I ask Zhangsan Lisi come
   ‘I asked Zhangsan to come.’

(18) a. wo z Chunbei mingtian xiawu tian hei yihou wo yi-ge ren lai.
   I prepare tomorrow afternoon sky dark after I one-cl. person come
   ‘I plan to come along tomorrow afternoon after it gets dark.’

b. wo quan Zhangsan ruguo mei-you ren mai zhe-ben shu, ta ye bu yao
   I persuade Zhangsan if not-have person buy this-cl. book he also not will
mai].
buy
‘I persuaded Zangsan not to buy this book if no one bought it.’
c. ni zui-hao shefa [jintian xiawu san le hui yihou ni yi-ge ren
you most-good try today afternoon end PRF meeting after you one-CL person
lai].
come
‘You had better try to come by yourself this afternoon after the meeting is over.
d. wo bi Zangsan [bu-guan fasheng shenmi shi ta dou bixu ba dongxi zhao
I force Zangsan no-matter happen what matter he all must BA thing find
hui-lai].
return-come
‘I forced Zangsan to find that thing no matter what happened.’
e. wo jiao Zangsan [jintian xiawu ta wulun-ruhe dou yao lai].
I ask Zangsan today afternoon he regardless-how all will come
‘I told Zangsan that he must come this afternoon whatever happens.’ (Hu et al.
2001:1131–1132)

The following minimal variants of the sentences in (18) confirm that when the overt embedded
subject is not anaphoric with the relevant matrix argument, the result is ungrammatical:

(19) a. *wo zhunbei [mingtian xiawu tian hei yihou lisi yi-ge ren lai].
I prepare tomorrow afternoon sky dark after Lisi one-CL person come

b. *wo quan Zangsan [ruguo mei-you ren mai zhe-ben shu, lisi ye bu yao
I persuade Zangsan if not-have person buy this-CL book Lisi also not will
mai].
buy

c. *ni zui-hao shefa [jintian xiawu san le hui yihou lisi yi-ge ren
you most-good try today afternoon end PRF meeting after Lisi one-CL person
lai].
come

d. *wo bi Zangsan [bu-guan fasheng shenmi shi lisi dou bixu ba dongxi zhao
I force Zangsan no-matter happen what matter Lisi all must BA thing find
hui-lai].
return-come
If we analyzed examples like (18) as biclausal structures in which each clause contains its own base-generated subject, it would be unclear why the presence of an overt subject would be contingent on the presence of an adverbial phrase and on the subject’s coreferentiality with a matrix argument. But these properties can be naturally captured on a (monoclausal) raising approach: the overt embedded subjects are resumptive. Such an approach brings these facts in line with the phenomenon known as copy control, i.e., a control structure in which both the controller and the controller are pronounced. As summarized by Polinsky & Potsdam (2006), copy control has been documented for Assamese (Haddad, 2007), San Lucas Quiaviní Zapotec (Lee, 2003; Boeckx et al., 2007, 2008), and Tongan (Chung, 1978). Even in this small set of languages for which copy control is attested, it is apparent that copy control is subject to a number of points of variation, including whether it is obligatory or in optional variation with “normal” control and whether it involves a resumptive pronoun or a full DP copy. For example, Assamese exhibits obligatory resumptive pronouns in subject adjunct control structures, and Zapotec exhibits optional full DP copies in

3. Hu et al. (2001) suggest that the role of the adverbial phrase is to override an obviation principle that disallows overt (and presumably, non-reflexive) pronouns that are coreferential with their closest prominent NP. Such a principle, however, seems to be challenged by data like the following:

(i) a. zhangsan\textsubscript{1} renwei [ta\textsubscript{1} hen gao].
   Zhangsan believe he very tall
   ‘Zhangsan believes that he is tall.’

   b. wo gaosu ta\textsubscript{1} [ta\textsubscript{1} yinggai likai].
   I tell him he should leave
   ‘I told him\textsubscript{1} he\textsubscript{1} should leave.’

As for the obligatory coreferentiality between the embedded subject and a matrix argument, Hu et al. (2001) suggest that it a consequence of the lexical semantics of the embedding predicate: “For example, the lexical meaning of persuade is such that the agent realized as the subject of the embedded clause must be identical to the persuaded person.” (p. 1133). It is not clear how such a constraint could be implemented, however, since a basic consequence of compositionality is that a verb cannot have semantic access to the internal structure of its complements.
subject and object complement control. If this approach to the Mandarin data is on the right track, then Mandarin copy control instantiates the resumptive strategy, and appears to be optional in that the resumptive copy is never obligatory, although this optionality is conditioned by the presence vs. absence of an intervening adverbial phrase. This kind of conditioning may be consistent with the finding that the acceptability of resumptive pronouns in English wh-structures improves with increased syntactic distance between the site of resumption and the landing site (Alexopoulou & Keller 2007, see also Heestand et al. 2011).

Hu et al.’s (2001) second and even more challenging set of data is given in (21). As we see in (20), the predicates dasuan ‘plan’ and qing ‘invite’ ordinarily disallow overt embedded subjects. But this requirement is suspended in (21).

(20)  
a. wo dasuan (*ta) qu.  
I plan he go  
‘I plan to go.’

b. wo qing zhangsan (*lisi) chi fan.  
I invite Zhangsan Lisi eat food  
‘I invited Zhangsan to eat.’

(21)  
a. wo dasuan [tian hei yihou women yiqi qu].  
I plan sky dark after we together go  
‘I plan that we go together after it gets dark.’

b. Zhangsan dasuan [jin-nian xiatian laopo, ziji he erzi dou qu Qingdao du Zhangsan plan this-year summer wife self and son all go Qingdao spend jia].  
vacation  
‘Zhangsan planned to go to spend his holidays in Qingdao together with his wife and

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4. As evidenced by the following data from Xu (2003), ziji — Mandarin’s simplex reflexive pronoun — may realize the embedded subject position even in the absence of intervening adjunct.

(i) ta shefa {*wo/√/√ ziji} liang tian nei wancheng zhe-jian gongzuo.  
he try 1/√/√self two day in complete this-CL work  
‘He tried to complete this work in two days.’ (Xu 2003:90)

This suggests that resumptive ziji has looser licensing conditions than resumptive ta.
son this summer.’

c. wo qing Zhangsan [jintian xiawu liu dian yihou ta he ta taitai yiqi
I invite Zhangsan today afternoon six o’clock after he and his wife together
lai chi fan].
‘I invited Zhangsan and his wife to come to dinner after six this afternoon.’ (Hu et al.
2001:1132)

Here again, an adverbial phrase intervenes before the overt embedded subject. But here, the
overt embedded subject is not (exhaustively) anaphoric with the matrix argument. However, it
appears that the choice of embedded subject is nonetheless still not unconstrained: in all three of
the examples, the matrix argument is semantically in a subset relation with the embedded subject.
In other words, these sentences seem to instantiate an overt version of Partial Control whereby the
full identity of the embedded subject must be spelled out. Call this partial copy control. The
following minimal variants of the sentences in (21) confirm that when the overt embedded subject
is totally disjoint from the relevant matrix argument, the result is ungrammatical.

(22) a. *wo dasuan [tian hei yihou tamen yiqi qu].
I plan sky dark after they together go

b. *Zhangsan dasuan [jin-nian xiatian laopo he erzi dou qu Qingdao du jia].
Zhangsan plan this-year summer wife and son all go Qingdao spend vacation

c. *wo qing Zhangsan [jintian xiawu liu dian yihou lisi he wangwu yiqi
I invite Zhangsan today afternoon six o’clock after Lisi and Wangwu together
lai chi fan].
‘I invited Zhangsan and his wife to come to dinner after six this afternoon.’ (Hu et al.
2001:1132)

Given the split we see between (21) and (22), the data in (21) may still be still be amenable to a
monoclausal raising analysis via the hypothesis that when a complex subject vacates its embedded
position, it may ‘strand’ one or more of its parts.⁵ Although the embedded subjects in (21b–c)

⁵. This approach is reminiscent of the ‘null comitative adjunct’ approach to Partial Control that
has been advocated under the Movement Theory of Control: see Hornstein 2003; Rodrigues 2008;
Boeckx et al. 2010b, and also chapter 1 for discussion.
may be coordinate structures, no violation of Ross’s (1967) Coordinate Structure Constraint is ex-
pected, since it is independently known that resumption improves violations to this constraint. That
being said, however, conjunction structures in Mandarin are sometimes ambiguous with adjunction
structures, as illustrated in (23).

(23) zhangsan he lisi chi fan.
Zhangsan with/and Lisi eat food
‘Zhangsan and Lisi eat.’

OR: ‘Zhangsan eats with Lisi.’

In summary, what we have seen here is that although there are exceptions to the generalization
that the shefa-class disallows overt embedded subjects, these exceptions are subject to restrictions
that would be unexpected on a biclausal syntax in which each clause has its own base-generated
subject. Instead, the data point to the view that overt embedded subjects in the shefa-class arise
via resumption. The resumption approach helps us make sense of why they must be (partially
or exhaustively) identified by a matrix argument and why they are ordinarily found only in the
presence of intervening adjunct material.

5.4 The distribution of embedded modal and aspecual morphemes

5.4.1 Setting the scene

The relationship between the availability of overt embedded subjects and the availability of overt
embedded modal and aspecual morphemes in Mandarin controlled complements has played a key
role in the debate over whether Mandarin has a finite/nonfinite distinction. Here, I will briefly
sketch some of the relevant literature, data, and analytical options before focusing on the details in
the remaining subsections.

Huang (1989) (see also similar reasoning in Huang 1982; Li 1985, 1990), working under the
view that equates finiteness with the projection of AUX (i.e., the node that hosts auxiliaries in En-
In updated terminology, T or I), argues that Mandarin does have a finite/nonfinite distinction. In his words:

“In Chinese, there is a fairly systematic distinction between finite and nonfinite clauses which may be made on the basis of the potential occurrence of any element of the AUX category (such as an aspect marker or a modal).” (Huang 1989:189)

What Huang shows is that Mandarin clauses can be divided into two subtypes on the basis of whether they admit (24) or ban (25) modal auxiliaries and aspectual markers. Crucially, Huang generalizes, this division happens to correlate with whether the clause can have an overt subject. As illustrated in (24)–(25), the former subtype can whereas the latter subtype cannot. In (24), an embedded subject is possible, and correspondingly, embedded aspect and modal markers are possible as well. In (25), on the other hand, an embedded subject is not possible, and correspondingly, embedded aspect and modal markers are not possible either.

(24)  a. zhangsan shuo [(ta) lai-le].
      Zhangsan say he come-PRF
      ‘Zhangsan said he came.’

   b. zhangsan xiangxin [(ta) hui lai].
      Zhangsan believe he will come
      ‘Zhangsan believes that he will come.’ (Huang 1989:188)

(25)  a. wo bi lisi [{ta} {*hui/*neng/*yinggai} lai-{*zhe}].
      I force Lisi he will/can/should come-DUR
      ‘I forced Lisi to come.’

   b. lisi shefa {ta} {*hui/*neng/*keyi/*zai} lai-{*zhe/*guo/*le}}.
      Lisi try he will/can/may/PROG come-DUR/EXP/PRF
      ‘Lisi tried to come.’ (Huang 1989:189–190)

In essence, then, Huang argues that we can appeal to the finite/nonfinite distinction to explain why overt subjects and overt modal and aspectual particles are allowed/banned under the same conditions: when AUX is projected, it may host a modal or aspectual particle and also supports an overt subject, whereas when AUX is not projected, there is no place for a modal or aspectual particle,
and independent conditions on the distribution of nominal categories forces a PRO subject. This view of course receives important crosslinguistic support from English, where it is well established that there is a correlation between PRO and nonfiniteness; at the same time, however, one might argue that the view is undermined by more recent crosslinguistic work (Landau, 2004) that calls for a more nuanced theoretical relationship between PRO and nonfiniteness.

But theoretical worries aside, there are also apparent counterexamples to Huang’s generalization. Huang in fact notes examples like the following, where an aspectual marker is found even though the complement is controlled:

(26) a. wo bi ta [lai-le].
   I force he come-
   ‘I forced him to come.’

b. wo jiao ta [kan-guo ni-de shu].
   I tell he read-EXP you-POSS book
   ‘I have asked him to read your book.’ (Huang 1989:190)

Huang responds to these data by suggesting that although syntactically embedded, the aspect markers are semantically associated with the higher verb and thus not true counterexamples. In (26a), the perfective marker -le puts the forcing-to-come event rather than just the coming event into perfective aspect, and similarly in (26b), the experiential marker -guo puts the asking-to-read event rather than just the reading event into experiential aspect.6

But Xu (1985–1986); Hu et al. (2001) attack this view with the data in (27), showing that the matrix vs. embedded placement of an aspect marker can have an effect on interpretation, thus undermining the view that both involve a matrix construal:

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6. The perfective verb-final marker -le in fact has a homophonous clause-final variant with an inchoative or ‘Currently Relevant State’ semantics. (See section 5.4.4 below.) In (26a), verb-finality coincides with clause-finality and hence it could be that what we have here is an instance of clause-final -le which is overtly at the matrix level. Further below, however, we will see cases where verb-finality does not coincide with clause-finality and hence where this kind of analysis is not available.
If the aspect marker in (27b) were interpreted at the matrix level, these authors reason, then it should have the same semantics as (27a). But the asymmetry in the felicity of the parenthetical follow-up shows that this is not the case.

It has also been found that although the modal/future marker hui is ruled out in controlled complements, the semantically similar modal marker yao is acceptable (Li, 1985; Xu, 1985–1986, 1994; Hu et al., 2001):

(28) wo zhunbei mingtian [yao canjia yi-ge hui].
    I plan tomorrow will attend one-cl meeting
    ‘I plan to attend a meeting tomorrow.’ (Li 1985)

Data such as these leave us at an analytical choice point. One option is to deny that there is any systematic difference between two kinds of clausal complements in Mandarin. This position is espoused by Hu et al. (2001). The other possibility is to maintain that although the distinction is not as straightforward as believed in earlier work, there is nonetheless still a distinction to be made. The following more detailed investigation will lead me to the latter position, along with the view that the facts are based captured by appealing to a monoclausal/biclausal split rather than a finite/nonfinite split.

5.4.2 Modality: yao vs. hui

Hu et al. (2001) show that the future/modal marker yao is acceptable in Mandarin controlled complements (29a), in contrast with hui (29b). In non-controlled complements, on the other hand, both markers are acceptable (30).
(29)  a. wo zhunbei mingtian yao canjia yi-ge hui.
    I plan tomorrow will attend one-cl meeting
    ‘I plan to attend a meeting tomorrow.’ (Li 1985, cited by Hu et al. 2001:1122)

b. wo quan/bi ta \{*hui / √ yao\} lai.
    I persuade/force he will / will come
    ‘I tried to persuade/force him to come.’ (Hu et al. 2001:1123)

(30)  zhangsan renwei lisi hui/yao lai.
    Zhangsan believe Lisi will/will come
    ‘Zhangsan believes that Lisi will come.’

Following earlier work by Xu (1994), the authors suggest a semantic explanation for the asymmetry:

“hui is used to denote an objective futurity or possibility, but yao is used to denote a subjective futurity and possibility. . .[The variant of (30) that uses hui] is unacceptable because it is hard to imagine how it is possible to persuade or force a person to come without his knowing that he will come or without his own activation of the action of his coming” (Hu et al. 2001:1124).

But the question remains of why the semantics correlates with the syntax in the way shown in (29)–(30). If sentences like (29) are monoclausal whereas the sentence in (30) is biclausal, we can began to make sense of the asymmetry. In a biclausal structure, the embedded complement has available the full range of modal heads. In a monoclausal structure, however, the incompatibility between quan/bi and hui can be understood as involving constraints on the co-occurring of functional heads. And the acceptability of yao in these contexts is reminiscent of the abstract future morpheme woll discussed in chapter 4. As described in chapter 4, woll is the abstract root argued by Abusch (1985) and many others to be at the base of English will and would, and posited by Wurmbrand (2011) to be projected in future-oriented infinitives. As also mentioned in chapter 4, Jóhannsdóttir & Matthewson (2007); Matthewson (2011) argue that woll is realized overtly as the particle dim in Gitxsan, illustrated in (31): dim occurs in precisely those environments where the abstract future morpheme woll has been posited to account for interpretational facts about English.

(31)  Sim hasak’y dim algali ahl wiiltsxw
    Really want-1SG FUT watch PRT film
If this analogy is on the right track, then English, Mandarin and Gitxsan exhaust the space of three logical options in how they realize \textit{woll}: always covert (English \textit{woll}), always overt (Gitxsan \textit{dim}), and optionally overt (Mandarin \textit{yao}).

5.4.3 \textit{Aspect}: verb-final -\textit{le} and -\textit{guo}

A number of scholars (Li 1985, 1990; Xu 1985–1986; Huang 1989; Y. Huang 1995; Hu \textit{et al.} 2001) have noted that some control predicates in Mandarin support the aspectual markers -\textit{le} and -\textit{guo} in their complement (32a), just like non-control predicates (32b):

\begin{enumerate}
  \item a. zhangsan qing lisi \textit{[chi-le/-guo fan]}.
    \textit{Zhangsan invite Lisi eat-PRF/-EXP food}
    \textit{‘Zhangsan invited Lisi to have a meal.’}
  \item b. zhangsan gaosu lisi \textit{[wangwu chi-le/-guo fan]}.
    \textit{Zhangsan tell Lisi Wangwu eat-PRF/-EXP food}
    \textit{‘Zhangsan told Lisi that Wangwu had a meal.’}
\end{enumerate}

The aforementioned scholars have reacted to data like (32a) in two different ways. Those that argue for a finite/nonfinite distinction in Mandarin argue that in cases like (32a), the aspect marker is actually associated with the matrix clause, despite surface appearances (Li 1985, 1990; Huang 1989). Those that argue against a finite/nonfinite distinction, on the other hand, point to data like (32a) as showing that any kind of clause may bear an aspect marker and hence the distribution of aspect markers cannot be used to diagnose a finite/nonfinite distinction (Xu 1985–1986; Y. Huang 1995; Hu \textit{et al.} 2001).

Here I would like to make the case that the pair of sentences in (32), despite their superficial similarity, actually evidence a split that supports the view that (32a) is monoclausal whereas (32b) is biclausal. This essentially means that I will be siding with those who argue for a finite/nonfinite distinction, since like them I will be arguing that the aspect markers in sentences like (33a) are both...
syntactically and semantically associated with the matrix level. Unlike them, however, I tie the split in (32) not to a finite/nonfinite distinction but rather to a monoclausal/biclausal distinction.

My first argument is based on the claim that -le and -guo are not purely aspeccual in meaning; they also have a temporal component. In particular, Lin (2003, 2006) argues that part of the semantic contribution of both of these morphemes is to place the event’s topic time before the evaluation time. In a matrix context, the evaluation time is the speech time, so (33a) entails that the time of Lisi making a cheesecake precedes the time of utterance and (33b) entails that the time of Lisi drinking precedes the time of utterance.

(33)  a. lisi zuo-le yi-ge qishi dangao.
    Lisi make-PRF one-CL cheese cake
    ‘Lisi has made a cheesecake.’ (Lin 2006:12)

    b. lisi he-guo jiu.
    Lisi drink-EXP wine
    ‘Lisi drank wine before.’ (Lin 2006:10)

In a complement clause, however, Lin (2006) (see also Li 1999; Lin 2003) shows the evaluation time is identified with the understood time of the matrix predicate. Thus (34a) entails that the time of the whole village knowing the matter precedes the time of Lisi’s saying and (34b) entails that the time of Mary getting angry precedes the time of John’s saying. (Though cf. Rubinstein & Hashimoto 2009 for additional relevant data and discussion of possible alternative analyses.)

(34)  a. lisi shuo quan cun de ren dou zhidao-le na-jian shi.
    Lisi say all village PRT person all know-PRF that-CL matter
    ‘Lisi said that the people of the whole village had known the matter.’ (Lin 2006:26)

    b. yuehan shuo mali sheng-guo qi.
    John say Mary get-EXP angry
    ‘John said that Mary was angry (before the saying time).’ (Lin 2006:26)

Returning to the crucial pair of sentences, repeated in (35), the important observation is that in the case where -le/-guo is found in a controlled complement, it does not entail that the event time
associated with the embedded material precedes the event time of the matrix verb. In other words, (35a) does not entail that the time of Lisi having a meal precedes the time of Zhangsan’s invitation; in fact, this would be absurd, given the meaning of ‘invite’. This is in contrast to (35b), which does entail that the time of Wangwu having a meal precedes the time of Zhangsan telling Lisi.

(35) a. zhangsan qing lisi [chi-le/-guo fan].
    Zhangsan invite Lisi eat-PRF/-EXP food
    ‘Zhangsan invited Lisi to have a meal.’ → Lisi’s meal precedes Zhangsan’s invitation.

b. zhangsan gaosu lisi [wangwu chi-le/-guo fan].
    Zhangsan tell Lisi Wangwu eat-PRF/-EXP food
    ‘Zhangsan told Lisi that Wangwu had a meal.’ → Wangwu’s meal precedes Zhangsan’s telling.

One possible reaction to this semantic asymmetry would be to think that the lexical semantics of ‘invite’ (which requires that its complement have an interpretation which is futurate with respect to matrix time) suppresses the normal temporal contribution of -le/-guo. But this seems unlikely on crosslinguistic grounds, given the infelicity of examples like (36). Like Mandarin -le/guo, English infinitival have contributes a relative past interpretation. Under a predicate like invite, it is infelicitous:

(36) #John invited Bill to have eaten a meal.

This suggests that the lexical semantics of an embedding verb cannot override the temporal contribution of an embedded aspectual morpheme. I therefore conclude that in sentences like (35a), the aspect marker is semantically associated with the matrix level: it places the matrix event (Zhangsan inviting Lisi to have a meal) temporally prior to utterance time.

A second argument pointing to the same conclusion is due to Li (1990). Ordinarily, the adverb congqian ‘before’ exhibits a same-clause constraint with the experiential aspect marker -guo, as shown in (37a). But as we see in (37b), this same-clause requirement is apparently suspended when a controlled complement is involved. We can easily explain this contrast by maintaining the strong generalization that congqian must occur in the same clause as -guo and analyzing (37b) as
a monoclausal functional restructuring configuration. 7

(37)  

a. wo congqian gaosu{-guo} ta [ni lai{*-guo} zher].  
   I before tell{-EXP} he you come{*-EXP} here  
   ‘I told him before that you came here.’

b. wo congqian qing ta [chi-guo fan].  
   I before invite he eat{-EXP} food  
   ‘I invited him to eat before.’ (Li 1990:18–19)

Finally, a third argument that points to this same conclusion is one that relies on a well known interaction between aspect and negation in Mandarin (see e.g. Huang 1988): to negate an aspectually zero-marked sentence like (38a), the negative particle bu is inserted preverbally, as in (38b). To negate a sentence like (39a) with verb-final -le, on the other hand, two special things happen: le is replaced with an (optional) preverbal allomorph you, and the negative particle surfaces as mei rather than bu, as in (39b).

(38)  

a. zhangsan chi yi-ge pingguo.  
   Zhangsan eat one-cl apple  
   ‘Zhangsan eats an apple.’

b. zhangsan bu chi yi-ge pingguo.  
   Zhangsan not eat one-cl apple  
   ‘Zhangsan does not eat an apple.’

(39)  

a. zhangsan chi-le yi-ge pingguo.  
   Zhangsan eat-prf one-cl apple

7. Hu et al. (2001) dispute this argument based on the observation that congqian need not always co-occur with -guo, as in examples like (i).

(i) wo congqian chi hun, xianzai chi su.  
   I before eat meat now eat vegetable  
   ‘I ate meat dish before but eat vegetable dish now.’ (Hu et al. 2001:1127)

But the fact still remains that under some conditions, like those in (37), congqian apparently does have to co-occur with -guo, and when we restrict ourselves to such cases, the same-clause constraint between congqian and -guo is operative.
‘Zhangsan ate an apple.’

b. zhangsan mei-(you) chi yi-ge pingguo.
   Zhangsan not-PRF eat one-CL apple
   ‘Zhangsan did not eat an apple.’

The important thing here is that in a negative context, perfect aspect is no longer realized as a suffix but rather as an independent preverbal word.

Now we can investigate how negation interacts with aspect in cases where aspect is embedded under a control predicate. (See Huang 1989 for similar data and argumentation.) (40a) is the baseline sentence: no negation is present, and perfective aspect is found on the lower verb. In (40b), we see that in principle, this kind of structure supports embedded negation. (40c–d) show what happens when negation and perfective aspect co-occur: now, the perfective allomorph you must appear overtly at the matrix level.

(40) a. zhangsan bi lisi chi-le fan.
    Zhangsan force Lisi eat-PRF food
    ‘Zhangsan made Lisi have a meal.’

b. zhangsan bi lisi bu chi fan.
    Zhangsan force Lisi not eat food
    ‘Zhangsan forced Lisi not to have a meal.’

c. zhangsan mei-you bi lisi chi fan.
    Zhangsan not-PRF force Lisi eat food
    ‘Zhangsan did not force Lisi to have a meal.’

d. *zhangsan bi lisi mei-you chi fan.
    Zhangsan force Lisi not-PRF eat food

This is in contrast to embedded aspect in a biclausal structure, where we get the expected patterning:

(41) a. zhangsan gaosu lisi [wangwu chi-le fan].
    Zhangsan tell Lisi Wangwu eat-PRF food
    ‘Zhangsan told Lisi that Wangwu had a meal.’

b. zhangsan gaosu lisi [wangwu mei-you chi fan].
    Zhangsan tell Lisi Wangwu not-PRF eat food
    ‘Zhangsan told Lisi that Wangwu had a meal.’
We can explain the asymmetry between (40a) and (40d) by appealing to the syntax of -le vs. you.

In a positive sentence, -le is used for perfective aspect, and since it is a suffix, it is found on the main verb (here, *lai*), as in (42). In a negative sentence, on the other hand, *you* is used for perfective aspect, and since it is not a suffix but rather an independent word, it remains high in its base Asp position, as in (43). This explanation relies crucially on the idea that the sentences in (40) are monoclausal, i.e., that *bi* ‘force’ is an inflectional-layer functional head whose complement does not contain its own projection of Asp that could host the embedded instance of *you* in (40d).

\[\begin{align*}
(42) & \quad \text{AspP} \\
& \quad \text{Asp} \\
& \quad \text{FP} \\
& \quad \text{le} \\
& \quad \text{F} \\
& \quad \text{bi} \\
& \quad \text{XP} \\
& \quad \text{bi} \\
& \quad \text{V-le}_1...
\end{align*}\]

\[\begin{align*}
(43) & \quad \text{NegP} \\
& \quad \text{Neg} \\
& \quad \text{mei} \\
& \quad \text{AspP} \\
& \quad \text{Asp} \\
& \quad \text{FP} \\
& \quad \text{you} \\
& \quad \text{F} \\
& \quad \text{bi} \\
& \quad \text{V-...}
\end{align*}\]

Of course, an important question remains of where in the structure of the Mandarin clause the projections associated with aspectual markers like -le and -guo are realized and how -le and -guo end up as suffixes. This relates to the more general question of the syntax of aspect marking in Mandarin. According to the most popular family of approaches, Asp projects somewhere over VP, as assumed in (42)–(43). To reconcile this hierarchical arrangement with the suffixal status of -le and -guo, three options are in principle available: V-to-Asp movement, PF-lowering of Asp to V, or base-generation of Asp as a suffix on V plus LF raising. For relevant literature, see Wang 1965; Cheng 1989; Tang 1990; Gu 1993; Chiu 1995. Gu (1993) contrasts the three approaches and argues that the latter one best matches the facts.\(^8\)

Regardless of implementation, however, the descriptive generalization is that -le attaches to a verb and not to any preverbal functional head that may intervene between Asp and V. Consider, for

\[\small{\text{8. Sybesma (1997, 1999) takes a different approach altogether, arguing that -le is a resultative predicate that originates below V.}}\]
example, the so-called *ba* construction illustrated in (44), where *ba* is a preverbal function head that takes an argument to its right (Sybesma, 1999; Bender, 2000; Li, 2006). When perfective aspect occurs in the *ba* construction, then a positive sentence will exhibit suffixal -*le* on the lexical verb, as in (44a), but a negative sentence will exhibit *you* to the left of *ba*, as in (44b).

\[(44)\]  
\[\text{a. ta ba}\{*-le\} \text{juzi bo}\{-le\} \text{pi.} \]
\[\text{he PRF PRF orange peel PRF skin} \]
\[\text{‘He peeled the skin off the orange.’} \]
\[\text{b. ta } \{\text{mei-you}\} \text{ba juzi } \{\text{*mei-you}\} \text{bo pi.} \]
\[\text{he not PRF BA orange not PRF peel skin} \]
\[\text{‘He did not peel the skin off the orange.’} \]

On the functional restructuring approach to Mandarin complement control, the placement of the aspect marker is as expected: since the ‘matrix control verb’ is actually a functional head, -*le* must be realized as a suffix on the embedded verb (which is in fact the main verb, on this analysis), just as in (44a). (See below, however, for an important qualification: in some control structures, the aspect marker may also appear on the higher verb.)

I close this discussion by mentioning a couple of important outstanding questions. The first important outstanding question has to do with alternative ways of realizing aspectual markers in control sentences. As discussed above, a prediction of the functional restructuring approach to complement control — combined with the independent observation that Mandarin aspectual suffixes must always combine with the verb rather than with any preverbal functional head — is that in a complement control structure, the aspectual suffix should appear on the embedded verb. But in fact, this option, shown in (45a), exists with the alternative in (45b) where the aspectual suffix is realized on the control verb.

\[(45)\]  
\[\text{a. zhangsan qing lisi [chi-le/-guo fan],} \]
\[\text{Zhangsan invite Lisi eat PRF EXP food} \]
\[\text{‘Zhangsan invited Lisi have a meal.’} \]

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b. zhangsan qing-le/-guo lisi [chi fan],
   Zhangsan invite-PRF/-EXP Lisi eat food
   ‘Zhangsan invited Lisi to have a meal.’

Apparently, though, this is not always a licit option; cf. (46).

(46) a. ta kaishi huifu-le jiankang.
   he begin recover-PRF health
   ‘He began to recover his health.’

b. *ta kaishi-le huifu jiankang.
   he begin-PRF recover health
   (adapted from Li 1999:29)

Even more interesting is that for at least some speakers, control sentences admit double aspect-marking. According to Li (1985), examples like (47a–b) are grammatical: the matrix verb contains either -le or -guo and that embedded verb contains the other. Examples like (47c–d), on the other hand, where the same aspect marker is repeated, are degraded. (Though see also C.C. Tang (1990:378), who claims that examples similar to those in (47c–d) are grammatical.)

(47) a. wo qing-le Zhangsan chi-guo fan le.
   I invite-PRF Zhangsan eat-EXP food PRT
   ‘I have invited Zhangsan to eat a meal.’

b. wo qing-guo Zhangsan chi-le fan le.
   I invite-EXP Zhangsan eat-PRF food PRT
   ‘I have invited Zhangsan to eat a meal.’

c. ?wo qing-le Zhangsan chi-le fan le.
   I invite-PRF Zhangsan eat-PRF food PRT
   ‘I have invited Zhangsan to eat a meal.’

d. ?wo qing-guo Zhangsan chi-guo fan le.
   I invite-EXP Zhangsan eat-EXP food PRT
   ‘I have invited Zhangsan to eat a meal.’ (Li 1985:43)

Li (1985) suggests that these sentences reflect the more general fact that -le and -guo can co-occur in a monoclausal structure, as in (48). The grammaticality of (48) means that the double aspect marking in (47a–b) does not necessarily undermine a monoclausal analysis for these kinds of sen-
tences.

(48) ta yijing kan-guole nei-ben shule.
    he already read-exp that-cl book prf
   ‘He has already read that book.’ (Gu 1993:70)

The second important outstanding question has to do with the interpretational effect of aspect placement. As discussed above, Xu (1985–1986) reports the following minimal pair:

(49) a. wo qing-guote [chi fan], (keshi ta mei lai).
    I invite-exp he eat meal but he not.prf come
   ‘I invited him to eat, (but he did not come).’

b. wo qing ta [chi-guofan], (# keshi ta mei lai).
    I invite he eat-exp meal but he not.prf come
   ‘I invited him to eat, (# but he did not come).’ (Xu 1985–1986:349)

The unacceptability of the parenthetical follow-up in (49b) suggests that the high placement of the aspect marker gives rise to an ACTUALITY ENTAILMENT (for relevant literature, see Bhatt 1999; Hacquard 2006, 2009; Mari & Martin 2007; Piñón 2009; Homer 2010; Kratzer 2011; Giannakidou & Staraki to appear): the sentence entails that the eating was realized. Hence, the puzzle is to understand why the high vs. low placement of the aspect marker correlates with the absence vs. presence of such an entailment. In Hacquard’s (2006; 2009) approach, actuality entailments arise precisely when perfective aspect occurs in a monoclausal configuration. If this is on the right track, then one possibility is that in (49a), the placement of the aspect marker on the higher control predicate blocks restructuring by forcing a lexical rather than a functional parsing for qing ‘invite’, and the resulting biclausality suppresses the actuality entailment. I leave it to future research to investigate this possibility more fully.

5.4.4 Clause-final le

In addition to the verb-final le particle discussed in section 5.4.3 above, Mandarin also has a homophonous particle with a clause-final syntax. Debate persists on the syntax and semantics of
the two particles and their theoretical relationship to each other; verb-final *le* has been variably analyzed as encoding perfectivity (Smith, 1991), ‘realization’ (Sybesma, 1997, 1999) or assertion (Klein *et al.*, 2000), while an influential approach to clause-final *le* holds that it encodes ‘Currently Relevant State’, either due to an objective change of state (‘inchoativity’) or a subjective change in importance (Li & Thompson, 1981). For work on clause-final *le*, see, among other works, Chao 1968; Li & Thompson 1981 for descriptive generalizations; Ernst 1994b; Shen 2004; Lin 2011 for syntactic proposals; Lin 2003 for formal semantics, and Sybesma 1999; Lin 2003 for comparison to verb-final *le*.

For reasons that will become clear below, I will follow Shen (2004); Lin (2011) in thinking that clause-final *le* heads an Asp projection over VP and directly below Tense (or directly below where Tense *would* sit, if Mandarin lacks such a projection). Its precise semantics will not be crucial except in the way that *le* interacts scopally with other elements in the sentence. But as a first approximation of its semantic contribution, the following minimal pair due to Lin (2003) shows that clause-final *le* differs from garden-variety perfectivity in that (at least under some conditions) it entails or strongly implicates that the relevant state of affairs continues to hold (50a), unlike what we find with verb-final *le* (50b). This supports Li & Thompson’s (1981) view that clause-final *le* encodes ‘Currently Relevant State’.  

(50)  

a. ??zhangsan zuotian mai yi-liang xin che le, keshi jintian jiu ba chezi  
Zhangsan yesterday buy one-cl new car LE2 but today then BA car  
mai-gei-le bie-ren.  
sell-give-LE1 other-person  
‘Zhangsan bought a new car yesterday, but he sold it to some other person today.’

b. zhangsan zuotian mai-le yi-liang xin che, keshi jintian jiu ba chezi  
Zhangsan yesterday buy-LE1 one-cl new car but today then BA car  
mai-gei-le bie-ren.  
sell-give-LE1 other-person  
‘Zhangsan bought a new car yesterday, but he sold it to some other person today.’

9. Here and throughout the rest of this section, I will gloss verb-final *-le* as LE1 and clause-final *le* as LE2.
Clause-final *le* is important to the argumentation in this chapter for two reasons. First, it has recently been implicated in a novel argument for the existence of a finite/nonfiniteness distinction in Mandarin (Lin, 2011). Second, as a clause-attaching morpheme, it can be indirectly used to detect clause boundaries, and hence is relevant in testing my proposal that the *shefa*-class instantiates monoclausal structures whereas the *renwei*-class instantiates biclausal structures. In what follows, I discuss these two matters in turn.

5.4.4.1 Clause-final *le* and (non)finiteness

Lin (2011) presents a novel argument for the presence of a finite/nonfinite distinction in Mandarin. The empirical basis for the argument is the scopal asymmetry in minimal pairs like the following:

(51) a. zhangsan *keneng* qu taibei *le*.

Zhangsan *may go* Taipei LE2

‘Zhangsan *may have gone* to Taipei.’

\[
\text{may} > \text{PRF}
\]

\[
\text{NOT: ‘It has become possible that Zhangsan *goes* to Taipei.’}
\]

\[
\text{*PRF > may}
\]

b. zhangsan *neng* qu taibei *le*.

Zhangsan *be able go* Taipei LE2

‘Zhangsan *be able to go* to Taipei.’

\[
\text{PRF > able}
\]

\[
\text{NOT: ‘Zhangsan *be able to have gone* to Taipei.’ (Lin 2011:52–53)}
\]

\[
\text{*able > PRF}
\]

In (51a), we see that clause-final *le* obligatorily takes *narrow* scope with respect to the epistemic modal *keneng* ‘may’, whereas in (51b), we see that *le* obligatorily takes *wide* scope with respect to the circumstantial modal *neng* ‘be able’. These scope restrictions are significant because the clause-final syntax of *le* might lead one to expect an attachment ambiguity that would render either scope possible, and yet this is not what we find.

The core of Lin’s analysis of this split is based on four crucial ideas. First, following Lin & Tang (1995), Lin assumes that modals in Mandarin, including *keneng* and *neng*, are lexical verbs
that take clausal complements (which for Lin are TPs). Second, Lin proposes that keneng and neng differ from each other in that the former embeds a finite TP whereas the latter embeds a nonfinite TP. Third, Lin proposes that a finite T is a T that has a value (i.e., provides a reference time in the sense of Reichenbach 1947) whereas a nonfinite T is a T that has no such value. Finally, Lin assumes following Shen (2004) that le sits in Asp, and furthermore proposes that le can occur only when its clause-local T is valued.

With these ideas in place, Lin’s proposed structures for (51a–b) are as in (52a–b) respectively. In (52a), keneng embeds a finite TP; consequently, its T is valued, and so le is licensed in the lower clause, thereby resulting in its narrow scope with respect to the modal. (The clause-final surface word order for le is derived by assuming that VP eventually moves to [Spec,AspP].) In (52b), on the other hand, neng embeds a nonfinite TP; consequently, its T is unvalued, and so le is not licensed (instead, we find a phonologically null static aspect marker, in the sense of Shen 2004). In this case, le must sit in the matrix projection of Asp, and thereby takes wide scope with respect to the modal.

Note, however, that although these proposals derive the obligatory narrow scope of le in (51b), they do not derive the obligatory wide scope of le in (51b); rather, they predict that both scopal relations should be possible in (51b). Because both the matrix projection and the embedded projection of T are finite, le should in principle be able to sit in either position.
Consequently, Lin must add one additional stipulation to the effect that Mandarin epistemic modals are incompatible with perfective *le*. As independent evidence, Lin cites the fact that although the epistemic modal may occur as the main predicate in a sentence (53a), it may not combine with perfective *le* (54a), unlike what is the case for other stative predicates (54b).
Having reviewed Lin’s account of the scope facts, I will now present an alternative account which I believe is simpler and which does not rely on the existence of a finite/nonfinite distinction in Mandarin. In particular, only two assumptions are needed. First, the Mandarin modals keneng and neng realize functional heads in the inflectional layer of the clause (as in Huang 1989; Ernst 1994b; Hsu & Ting 2008; Ting 2010). This does not exclude the possibility that in certain syntactic contexts — such as those explored by Lin & Tang 1995 — they may also realize lexical verbs; this would be analogous to the way, on the analysis proposed in Chapter 2 above, English begin realizes a functional head when it embeds an infinitival complement but realizes a lexical verb when it embeds a nominal complement. Second, Mandarin clause structure obeys the hierarchy in (55). Admittedly, what (55) does is stipulate the scopal constraints that we are trying to capture. However, a wealth of crosslinguistic evidence supports the idea that epistemic modals (e.g., keneng) project above Tense whereas circumstantial modals (e.g., neng) project below Tense; see e.g. Iatridou 1990; Picallo 1990; Cinque 1999; Stowell 2004; Hacquard 2010. Hacquard (2010) furthermore argues that Asp projects directly below Tense; if we assume that le realizes Asp in Hacquard’s sense, then (55) is exactly the hierarchical ordering we expect. Furthermore, as we saw from Lin 2011, the alternative to stipulating (55) is an otherwise unmotivated assumption that Mandarin has a finite/nonfinite distinction, as well as an auxiliary stipulation that Mandarin epistemic modals
cannot combine with perfective aspect.

(55)  \[ \text{keneng} > \text{le} > \text{neng} \]

Assuming (55), the structures for (56a–b) are as in (57a–b) respectively. For easier comparison with Lin’s (2011) proposal, I follow him in assuming a Tense node, but this is not crucial: all that matters is the relative ordering of EpisP, AspP, and AbilityP.

(56)  a. zhangsan keneng qu taibei le.
      Zhangsan may go Taipei LE2
      ‘Zhangsan may have gone to Taipei.’
      \[ \text{may} > \text{PRF} \]
      NOT: ‘It has become possible that Zhangsan goes to Taipei.’
      \[ *\text{PRF} > \text{may} \]

b. zhangsan neng qu taibei le.
   Zhangsan be.able go Taipei LE2
   ‘It has become the case that Zhangsan is able to go to Taipei.’
   \[ \text{PRF} > \text{able} \]
   NOT: ‘Zhangsan is able to have gone to Taipei.’ (Lin 2011:52–53)
   \[ *\text{able} > \text{PRF} \]

(57)  a. 
      \[ \text{EpisP} \]
      \[ \text{Epis} \]
      \[ \text{TP} \]
      \[ \text{Zhangsan} \]
      \[ \text{keneng} \]
      \[ \text{T' \} \]
      \[ \text{T} \]
      \[ \text{AspP} \]
      \[ \text{Asp} \]
      \[ \text{le} \]
      \[ \text{VP} \]
      \[ \text{Zhangsan qu taibei} \]

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In summary, Cinque’s (1999; 2006) IP hierarchy, together with the view that Mandarin modals (can) realize functional heads, captures Lin’s (2011) scope facts without having to appeal to a finite/nonfinite distinction. This alternative proposal also has the consequence that, unlike for Lin, modals instantiate monoclausal rather than biclausal structures and hence there is only one possible site of attachment for clause-final le. I will now turn to other structures where clause-final le is useful in determining monoclausality vs. biclausality.

5.4.4.2 Clause-final le and mono- vs. bi-clausality

Of the so-called sentence-final particles in Mandarin, some truly are sentence-final in the sense that they cannot be embedded. The polar interrogative particle ma, for example, has this property: as evidenced by (58a), zhidao ‘know’ admits an interrogative complement clause. But when ma is used, as in (58b), it can only be construed at the matrix-level and not at the embedded level, even though its clause-final syntax might lead us to expect an attachment ambiguity.

(58) a. ni bu zhidao [ta lai bu lai]
   you not know he come not come
   ‘You don’t know whether or not s/he’s coming.’

   b. ni bu zhidao [ta lai] ma
   you not know he come q
   ‘Do you not know that s/he’s coming?’
As documented recently by Paul (2011), however, clause-final le does not have this property; the semantics of the following examples makes it clear that le is construed with the complement clause only.\footnote{Clause-final -le is, however, ruled out in relative clause and conditional antecedents:}

\begin{itemize}
  \item[(59)]
    \begin{itemize}
      \item[a.] ta gaosu wo [ [ xiao-zhang bu qu beijing ] le ].
        he tell I school-resident not go Beijing LE2
        ‘He told me that the school president doesn’t want to go to Beijing anymore.’
      \item[b.] ta [ { renwei / hen yihan } [ Lisi bu qu beijing ] le ].
        he believe very regret Lisi not go Beijing LE2
        ‘He thinks/regrets that Lisi no longer wants to go to Beijing.’
      \item[c.] ta [ { renwei / hen yihan } [ Lisi bu bang mang ] le ].
        he believe very regret Lisi not assist help LE2
        ‘He thinks/regrets that Lisi no longer wants to help.’ (Paul 2011:2)
    \end{itemize}

Since it can be embedded, we predict an attachment ambiguity when le appears at the end of a complement clause with a renwei predicate. For example:

\begin{itemize}
  \item[(60)]
    zhangsan zhidao wo yao qu le.
    Zhangsan know I be.going go LE2
    High attachment: ‘It has now become the case that Zhangsan knows that I’m going to go.’
    Low attachment: ‘Zhangsan knows that it has now become the case that I’m going to go.’
\end{itemize}

Paul generalizes that clause-final le can be embedded only if the clause it attaches to does not have an instance of C, such as de as used in relative clauses or dehua as used in conditional antecedents.
The ‘low attachment’ reading is what we find in the similar examples in (59) above. As for the ‘high attachment’ reading, this kind of reading can be brought out by additional context such as that supplied in (61a) and (61b). In (61a), the follow-up ‘you don’t need to tell him again’ makes salient Zhangsan’s knowledge state and hence the ‘high attachment’ reading whereby it is Zhangsan’s knowledge state that is ‘currently relevant’. In (61b), the entire structure is embedded into an after-clause where again the focus is on (the consequence of) Zhangsan’s (newly acquired and currently relevant) knowledge state.

(61) a. zhangsan zhidao wo yao qu le, ni bu yong zai gaosu ta le.
Zhangsan know I be.going go LE2 you not need again tell he LE2
‘Zhangsan now knows that I’m going to go; you don’t need to tell him again.’

b. [ zhangsan zhidao wo yao qu le ] zhihou feichang shengqi.
Zhangsan know I be.going go LE2 after extremely angry
‘After Zhangsan found out I was going, he was extremely angry.’

Further syntactic evidence for the attachment ambiguity comes from the fact that when the complement clause is fronted, le may either move along with it (62a) (low attachment) or stay behind (62b) (high attachment). Also under fronting, each clause may take its own instance of le, as in (62c), which further supports the idea that there is one position for le in each clause.11

11. In the absence of complement fronting, only one instance of clause-final le may appear, but this is likely due to a well-known and independent haplology effect that is detectable from the interaction of verb-final le and clause-final le: the two particles can co-occur (ia), but not if verb-finality coincides with clause-finality (ib). This is observed by Chao (1968); Li & Thompson (1981).

(i) a. zhangsan chi-le fan le.
Zhangsan eat.LE1 food LE2
‘Zhangsan has now eaten.’

b. zhangsan chi-le (*le).
Zhangsan eat-LE1 LE2
‘Zhangsan ate / has eaten.’
a. wo yao qu le, zhangsan zhidao.
   I be.going go LE2 Zhangsan know
   ‘That I’m going to go now, Zhangsan knows.’

b. wo yao qu, zhangsan zhidao le.
   I be.going go Zhangsan know LE2
   ‘That I’m going to go, Zhangsan now knows.’

c. wo yao qu le, zhangsan zhidao le.
   I be.going go LE2 Zhangsan know LE2
   ‘That I’m going to go now, Zhangsan now knows.’

When we turn to the shefa-class, on the other hand, no comparable attachment ambiguity is detectable. In an example like (63), as indicated by the gloss, clause-final le obligatorily takes wide-scope over the higher predicate.

(63) zhangsan shefa kai men le.
    Zhangsan try open door LE2
    ‘It has now become the case that Zhangsan tried to open the door.’

    NOT: ‘Zhangsan tried to make it now be the case that he opened the door.’

shefa ‘try’ seems not to support complement fronting and hence the fronting test cannot be used to directly test this lack of ambiguity, but a similar expression xiang banfa ‘think of a way’ does allow complement fronting, and supports the idea that the only position for clause-final le is at the root level. In (64), the fronted complement cannot contain le, because the whole structure is monoclausal, and le obligatorily takes wide scope over everything.

(64) [kai men (*le)] ta yijing xiang-guo banfa le.
    open door LE2 he already think-EXP way LE2
    ‘He already thought of a way (≈ tried) to open the door.’

I take this as further evidence that the shefa-class instantiates monoclausal structures. Proponents of the finite/nonfinite distinction could, of course, reinterpret the data as reflecting the fact that clause-final le is only available for finite clauses (basically what Lin 2011 proposes). And so again, the argument is based on simplicity: it is uncontroversial that Mandarin makes a distinction between
monoclausal and biclausal structures, and since this is all that is needed to account for the data, a finite/nonfinite distinction is superfluous.

5.5 Polarity licensing and focus movement as diagnostics for monoclausality

Li (1990) argues that licensing of the Mandarin polarity item *renhe* ‘any’ can be used as a diagnostic for finiteness/nonfiniteness. As illustrated in (65), *renhe* requires a licensor. Thus it is grammatical in the presence of negation, as in (65a), but ungrammatical in an ordinary positive declarative sentence, as in (65b). (See also Wang & Hsieh 1996; Cheng & Giannakidou 2005 for a more in-depth treatment of *renhe.*) Li then presents the minimal pair in (66). (66a) is designed to show that the licensor must be clause-local: negation on the matrix verb *gaosu* ‘tell’ does not license *renhe* in the embedded clause. But in (66b), where the matrix verb is the object-control predicate *quan* ‘persuade’, this requirement is seemingly suspended: negation on the matrix verb licenses *renhe* in the embedded complement. Li interprets this split as reflecting a finite/nonfinite symmetry, but another solution would be to maintain the strong generalization that *renhe* always requires a clause-local licensor, and analyze (66b) as a monoclausal structure.

(65)  a. ta **bu** xihuan **renhe** dongxi.
he not like any thing
‘He does not like anything.’

   b. *ta xihuan **renhe** dongxi.
   he like any thing (Li 1990:20)

(66)  a. *wo **mei-you** gaosu-guo ta [ni zuo **renhe** shiqing].
I not-PRF tell-EXP he you do any thing
‘I have not told him you did anything.’

   b. wo **mei-you** quan-guo ta [qu zuo **renhe** shiqing].
I not-PRF persuade-EXP he go do any thing
‘I have not persuaded him to do anything.’ (Li 1990:21)
However, Hu et al. (2001) present data challenging the claim that renhe requires a clause-local licensor. In examples like (67), the matrix verb takes a full clausal (non-controlled) complement, and yet matrix negation licenses an embedded instance of renhe. (67b) in particular is minimally different from (66a) in containing an aspect marker on the embedded verb and the attributive adjective huai ‘bad’ on the embedded direct object, suggesting that the ungrammaticality of (66a) has to do with factors not entirely reducible to the licensing conditions of renhe.

(67)  
\begin{enumerate}
  \item a. wo mei-you tingshuo [zhangsan xihuan-shang renhe guniang].
  I not-PRF hear Zhangsan like-on any girl
  ‘I did not hear that Zhangsan had fallen in love with any girl.’
  
  \item b. wo mei-you gaosu-guo ta [ni zuo-guo renhe huai shiqing].
  I not-PRF tell-EXP he you do-EXP any bad thing
  ‘I didn’t tell him you had done anything bad.’ (Hu et al. 2001:1128–1129)
\end{enumerate}

I conclude from these data, following Hu et al. (2001), that renhe licensing is not a good diagnostic for (non)finiteness (or for monoclausality/biclausality). However, Mandarin also has another series of polarity items, namely the so-called wh-indeterminates (Huang, 1982; Li, 1992; Cheng, 1997; Lin, 1998; Cheng & Giannakidou, 2005; Giannakidou & Cheng, 2006). In an ordinary positive declarative sentence like (68), a wh-expression like shenme ‘what’ only has an interrogative interpretation. But in contexts like (69), it is interpreted as everything or anything.

(68)  
\begin{enumerate}
  \item zhangsan chi shenme
  Zhangsan eat what
  ‘What does Zhangsan eat?’ NOT: ‘Zhangsan eats something/anything.’
\end{enumerate}

(69)  
\begin{enumerate}
  \item a. zhangsan shenme dou chi.
  Zhangsan what all eat
  ‘Zhangsan eats everything.’
  
  \item b. zhangsan shenme dou bu chi.
  Zhangsan what all not eat
  ‘Zhangsan does not eat anything.’
  
  \item c. zhangsan bu chi shenme.
  Zhangsan not eat what
\end{enumerate}

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‘Zhangsan does not eat anything.’

(69a–b) in particular involve focus-fronting: instead of being found in its canonical postverbal position as the direct object, *shenme* is found to the left of the VP. And as shown in (70), this ‘focus-fronting’ is clause-bound: if *shenme* is semantically associated with the embedded direct object position, it cannot be focused at the matrix VP position.

(70)  

a. *zhangsan shenme dou bu renwei lisi chi-le.*  
Zhangsan what all not believe Lisi eat-PRF  
Intended: ‘Zhangsan does not believe that Lisi ate anything.’

b. *zhangsan shenme dou bu zhidao lisi chi-le.*  
Zhangsan what all not know Lisi eat-PRF  
Intended: ‘Zhangsan does not know that Lisi ate anything.’

c. *zhangsan shenme dou bu yihan lisi chi-le.*  
Zhangsan what all not regret Lisi eat-PRF  
Intended: ‘Zhangsan does not regret that Lisi ate anything.’

d. *zhangsan shenme dou bu jingya lisi chi-le.*  
Zhangsan what all not surprised Lisi eat-PRF  
Intended: ‘Zhangsan is not surprised that Lisi ate anything.’

In (71), however, when the matrix predicate is a control predicate, this clause-locality is seemingly suspended: all of these sentences are ungrammatical even though *shenme* is fronted to the matrix VP from the embedded direct object position.

(71)  

a. *zhangsan shenme dou bu hui chi.*  
Zhangsan what all not can eat  
‘Zhangsan cannot eat anything.’

b. *zhangsan shenme dou bu gan chi.*  
Zhangsan what all not dare eat  
‘Zhangsan dares not eat anything.’

c. *zhangsan shenme dou bu xiang chi.*  
Zhangsan what all not want eat  
‘Zhangsan does not want to eat anything.’
d. zhangsan shenme dou bu zhunbei chi.
   Zhangsan what all not prepare eat
   'Zhangsan is not ready to eat anything.'

We can easily explain the contrast between (70) and (71) via the idea that focus-fronting is clause-bound and that the sentences in (71) instantiate monoclausal structures.

Other similar phenomena support this same conclusion. As discussed by Shyu (1995); Paul (2005), Mandarin has an *even*-focus construction which also involves fronting, as in the example in (72). Here, lian gou-rou ‘even dog-meat’ is focused from direct object position.

(72) zhangsan lian gou-rou dou chi-le.
   Zhangsan even dog-meat all eat
   ‘Zhangsan even ate dog meat.’

(73)–(74) evidences the same split we saw above: *even*-focus fronting appears clause-bound in (73), but in control structures like (74), this requirement is suspended.

(73)  a. *zhangsan lian gou-rou dou renwei lisi chi-le.
      Zhangsan even dog-meat all believe Lisi eat
      Intended: ‘Zhangsan even believes that Lisi ate dog meat.’

b. *zhangsan lian gou-rou dou zhidao lisi chi-le.
   Zhangsan even dog-meat all know Lisi eat
   Intended: ‘Zhangsan even knows that Lisi ate dog meat.’

c. *zhangsan lian gou-rou dou yihan lisi chi-le.
   Zhangsan even dog-meat all regret Lisi eat
   Intended: ‘Zhangsan even regrets that Lisi ate dog meat.’

d. *zhangsan lian gou-rou dou jingya lisi chi-le.
   Zhangsan even dog-meat all surprised Lisi eat
   Intended: ‘Zhangsan is even surprised that Lisi ate dog meat.’

(74)  a. zhangsan lian gou-rou dou hui chi.
      Zhangsan even dog-meat all can eat
      ‘Zhangsan can even eat dog meat.’

b. zhangsan lian gou-rou dou gan chi.
   Zhangsan even dog-meat all dare eat
‘Zhangsan even dares to eat dog meat.’

c. zhangsan lian gou-rou dou xiang chi.
   Zhangsan even dog-meat all want eat
   ‘Zhangsan even wants to eat dog meat.’

d. zhangsan lian gou-rou dou zhubai chi.
   Zhangsan even dog-meat all prepare eat
   ‘Zhangsan is even prepared to eat dog meat.’

Finally, one more phenomenon pointing to the same conclusion has to do with an object-preposing construction analyzed by Paul (2005) as an ‘internal topic’. In (75a), a direct object appears in situ embedded under two object-control predicates. In (75b), we see that the direct object can be fronted to the left of the highest control predicate.

(75) a. ta rang zhangsan pai xiaoping diaocha-le nei-jian shi.
   he make Zhangsan send Xiaoping investigate-PRF that-CL matter
   ‘He asked Zhangsan to send Xiaoping to investigate that matter.’

b. ta [nei-jian shi] rang zhangsan pai xiaoping diaocha-le.
   he that-CL matter make Zhangsan send Lisi investigate-PRF
   ‘He asked Zhangsan to send Xiaoping to investigate that matter.’ (Fu 1994, reported by Paul 2005)

This contrasts crucially with what we see in (76). Under a non-control predicate like shuo ‘say’, an embedded direct object can front to the embedded VP, as in (76a), but not to the matrix VP, as in (76b).

(76) a. wangwu shuo lisi [na-ben xiaoshuo] du-wan-le.
   Wangwu say Lisi that-CL novel read-finish-PRF
   ‘Wangwu said that Lisi finished reading that novel.’

   Wangwu that-CL novel say Lisi read-finish-PRF
Paul (2005) interprets these facts as reflecting a finite/nonfinite distinction, and Ernst & Wang (1995), in an earlier discussion of the data, in fact suggest they relate to a ‘clause union’ (i.e., restructuring/monoclausal) property of nonfinite complements. As with the previously considered phenomena, we can explain the facts quite easily by maintaining that object fronting / internal topicalization is clause-bound, and that (75b) involve a monoclausal structure.

5.6 Other potentially relevant phenomena

5.6.1 suō clitic climbing

As documented by Chiu (1995), Mandarin has a particle suō that optionally occurs preverbally in relative clauses that involve extraction of the direct object:

(77) [lisi (suō) mai de] nei-xie shu
Lisi suō buy rel that-cl book
‘the books that Lisi bought’ (Chiu 1995:78)

Chiu furthermore presents the data in (78a) to show that suō must remain local to the minimal clause that contains the extracted direct object. Comparing (78a) to the asymmetry in (78b–c), Chiu concludes that unlike object-control verbs such as quan ‘persuade’, Mandarin subject-control verbs like dasuan ‘plan’ are restructuring predicates. As shown in (78c), dasuan ‘plan’ is treated as a clausal unit with its complement with respect to the placement of suō.

(78) a. [lisi \{*suō\} yiwei [akiu \{✓ suō\} xihuan] de] nei-ge nühaizi
Lisi suō think Akiu suō like rel that-cl girl
‘the girl who Lisi thinks that Akiu likes’ (Chiu 1995:85–86)

b. [wo \{*suō\} quan akiu \{✓ suō\} mai de] nei-ben shu
I suō persuade Akiu suō buy rel that-cl book
‘the book that I persuaded Akiu to buy’ (Chiu 1995:107)

c. [lisi \{✓ suō\} dasuan \{*suō\} mai de] nei-ben shu
Lisi suō plan suō buy rel that-cl book
‘the book that Lisi plans to buy’ (Chiu 1995:107)
Ting (2010) (cf. also Ting 2003), however, in her ‘clitic climbing’ approach to *suo*, shows that in some cases, *suo* can appear outside the minimal clause even with a non-control predicate, as in (79).

(79)  
\[
\text{[zhangguan } \{ \text{suo} \} \text{ renwei/shuo-guo xiaoli } \{ \text{suo} \} \text{ bixu wancheng } \text{ de} ] \text{ renwu superior } \text{suo think/say-EXP Xiaoli suo must accomplish REL mission}
\]
‘the mission that superiors thought/said that Xiaoli had to accomplish’ (Ting 2010:458)

Rather than taking this as evidence that Mandarin lacks a finite/nonfinite distinction, however, Ting proposes that apparent cases of *suo* crossing a finite boundary as in (79) actually involve a disguised stacked relative clause structure, whereby a higher relative clause (here, *zhangguan renwei/shuo-guo ‘superiors thought/said’) modifies a lower relative clause (*xiaoli bixu wancheng ‘Xiaoli must accomplish’) which in turn modifies the head noun (*renwu ‘mission’). Ting provides two pieces of evidence for this. First, in the *renwei* ‘believe’ example, the relative clause marker *de* may appear in the expected position hypothesized for the higher relative clause, as in (80a), unlike what we find in the case of *bipo* ‘force’, as in (80b). Second, in the *renwei* example, *suo* may appear simultaneously on both verbs (81a), unlike what we find in the *bipo* case, as in (81b).

(80)  
\[
a. \text{[zhangguan renwei/shuo-guo (de)] [Xiaoli bixu wancheng de] renwu superior think/say-EXP REL Xiaoli must accomplish REL mission}
\]
‘the mission that superiors thought/said that Xiaoli had to accomplish’

\[
b. \text{[zhangguan bipo (*de)] [Xiaoli bixu wancheng de renwu] superior force REL Xiaoli must accomplish REL mission}
\]
‘the mission that superiors forced Xiaoli to accomplish’ (Ting 2010:458)

(81)  
\[
a. \text{[zhangguan suo renwei/shuo-guo xiaoli suo bixu wancheng de] renwu superior suo think/say-EXP Xiaoli suo must accomplish REL mission}
\]
‘the mission that superiors thought/said that Xiaoli had to accomplish’ (Ting 2010:460)

\[
b. \text{*[zhangguan suo bipo Xiaoli suo bixu wancheng de] renwu superior suo force Xiaoli suo must accomplish REL mission}
\]
‘the mission that superiors forced Xiaoli to accomplish’ (Ting 2010:460)
Regardless of whether we adopt the stacked relative structure analysis, however, the data in (80)–(81) evidence splits between the behavior of control and non-control predicates in relative clauses that warrant some explanation, and both splits are amenable to the generalization that *suo* and the relative clause marker *de* may only appear once per clause. Hence we have further evidence for the view that control predicates instantiate monoclusal structures in Mandarin.

However, Ting (2010) also explicitly rejects the view that *suo* clitic climbing involves restructuring/monoclusalality. Ting presents three reasons for rejecting this view. First, *suo* clitic climbing supports Partial Control (82). Second, it supports tense mismatches (83). Third, it supports embedded subjects (84).

(82) na-ge jiangjun *suo* jueding baowei de fangzi
that-CL general *suo* decide surround REL house
‘the house that the general decided to surround’ (Ting 2010:461)

(83) women qunian *suo* jueding jinnian yiding yao goumai de shu
we last.year *suo* decide this.year definitely will purchase REL book
‘the book that we decided last year to purchase this year’ (Ting 2010:462)

(84) wo *suo* yaoqiu lisi\(i\) [PRO\(i\) zai ziji\(i\) jiali wancheng de renwu
I *suo* ask Lisi at self home accomplish REL mission
‘the mission that I asked Lisi to accomplish at his own home’ (Ting 2010:462)

Of these tests, I believe that only the first one carries weight: it is indeed unexpected *jueding* ‘decide’, as a verb that supports partial control, should otherwise behave as though it instantiates a monoclusal structure. The other two tests, however, are not necessarily relevant. As for the tense mismatching data in (83), I showed above in chapter four that Italian *volere* ‘want’ admits a future-oriented complement even in the presence of clitic climbing, as in (85), which suggests that future-orientation is not contingent on biclausality.

(85) Ieri, *lo* volevo fare domani.
yesterday it I.wanted do tomorrow
‘Yesterday, I wanted to do it the next day (i.e., today).’

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As for (84), here Ting posits an embedded PRO subject to act as a binder to the lower reflexive \textit{ziji}. However, based on the supplied data, it could also be the case that \textit{lisi} directly binds the reflexive without an intermediate PRO subject.

I conclude from these considerations that, although the Partial Control facts deserve further attention, the overall \textit{suo} clitic climbing facts provide further support for the monoclausality of Mandarin control predicates.

5.6.2 Long-distance passivization

Huang (1999) appeals to a Mandarin finite/nonfinite distinction to explain the split in (86)–(87): long-distance passivization (i.e., promotion of the direct object of an embedded clause to matrix subject position) is possible in the examples in (86) but not in (87). This fits with the fact that in (86), the embedded clauses are (object-)controlled whereas in (87) the embedded clauses have their own overt subjects.

(86) a. zhangsan bei lisi pai jingcha zhua-zou-le.
  Zhangsan \textsc{pass} Lisi send police arrest-go-	extsc{prf}
  ‘Zhangsan was “sent-police-to-arrest” by Lisi.”

   b. nei-feng xin bei wo jiao Lisi qing Wangwu tuo ta meimei ji-zou-le.
      that-cl letter \textsc{pass} I tell Lisi ask Wangwu request he sister send-go-	extsc{prf}
       ‘That letter was “told-Lisi-to-ask-Wangwu-to-request-his-sister-to-send” by me.’

(87) a. *zhangsan bei lisi shuo jingcha zhua-zou-le.
  Zhangsan \textsc{pass} Lisi say police arrest-go-	extsc{prf}
  Intended: ‘Zhangsan was “said-police-arrested” by Lisi.”

   b. *nei-feng xin bei wo yiwei Lisi shuo Wangwu tuo ta meimei ji-zou-le.
      that-cl letter \textsc{pass} I think Lisi say Wangwu request he sister send-go-	extsc{prf}
      Intended: ‘That letter was “thought-Lisi-said-Wangwu-requested-his-sister-to-send” by me.’ (Huang 1999:15)

Hu \textit{et al.} (2001), however, dispute this generalization, arguing that putative nonfiniteness is neither a sufficient nor a necessary condition for Mandarin long-distance passivization. The data
in (88) show that in some cases, control predicates fail to support long-distance passivization. The data in (89) show that in some cases, non-control predicates do support long-distance passivization.

   Lisi PASS Zhangsan plan beat
   Intended: ‘Lisi was “planned-to-beat” by Zhangsan.’

b. *zhe-ben shu bei Zhangsan zhunbei mai.
   this-cl book PASS Zhangsan prepare buy
   Intended: ‘This book was “prepared-to-buy” by Zhangsan.’

c. *lisi bei zhangsan qitu da yixia.
   Lisi PASS Zhangsan attempt beat once
   ‘Lisi was “attempted-to-beat” once by Zhangsan.’ (Hu et al. 2001:1136)

(89) a. zhe-xie fanren bei fating xuanbu guanya 15 nian.
   this-cl criminal PASS court announce prison 15 year
   ‘These criminals were “announced-to-be-imprisoned-for-15-years” by the court.’

b. zhe-ge houxuanren bei dajia yizhi renwei jihu mei ren hui xuan.
   this-cl candidate PASS everyone unanimously think almost not person will elect
   ‘This candidate is unanimously “thought-almost-nobody-will-elect” by everyone.’

   (Hu et al. 2001:1137)

Pending further investigation, I tentatively conclude from the facts in (89) that passivization in Mandarin is not necessarily clause-bound. If this is the right conclusion, then we cannot use passivization as a diagnostic for monoclusality in Mandarin.

5.6.3 C.C. Tang’s (1990) (non)finiteness diagnostics

Tang (1990) discusses eight diagnostics for distinguishing finite and nonfinite complement clauses in Mandarin. Three of these diagnostics have already been discussed in detail above (embedded subjects, embedded modals, and embedded aspect markers); the remaining five I will discuss in this section, along with objections that Hu et al. (2001) raise for each one. The conclusion will be that while some of the diagnostics need to be discarded since they face fatal counterexamples, the
other (valid) diagnostics are easily reinterpretable as reflecting a monoclusal/biclausal distinction rather than a finite/nonfinite distinction.

The first of the five diagnostics has to do with the availability of an embedded question interpretation for embedded \textit{wh}-words: Tang shows that among \textit{renwei}-complements, some (like \textit{zhidao} ‘know’) admit \textit{wh}-words that result in an embedded question interpretation (90a) and others (like \textit{yiwei} ‘think’) allow only a matrix question interpretation (90b); among \textit{shefa}-complements, on the other hand, only a matrix question interpretation is possible (91).

(90) a. ta zhidao [shei mei lai].
    he know who not.PRF come
    ‘He knew who did not come.’

b. ni yiwei [ta mai-le shenme].
    you think he buy-PRF what
    ‘What did you think he bought?’

(91) a. ni dasuan [mai shenme].
    you plan buy what
    ‘What do you plan to buy?’

b. ta bi ni [nian shenme]?
    he force you study what
    ‘What did he force you to study?’ (Tang 1990:331)

Tang suggests two possible explanations for this split: either the \textit{shefa}-class is limited to [\textit{−wh}] complements for some unexplained reason, or the \textit{shefa}-class uniformly embeds nonfinite complements, and Mandarin nonfinite clauses are IPs rather than CPs, thus banning (covert) \textit{wh}-movement. Hu \textit{et al.} (2001), on the other hand, object to this diagnostic on the grounds that the correlation is one-way only: among the putative finite complements like those in (90), some pattern with the putative nonfinite complements in only allowing the matrix question interpretation, hence the contrast between (90a) and (90b).

But on the view that the \textit{renwei}-class instantiates biclausal structures whereas the \textit{shefa}-class instantiates monoclusal structures, the observed one-way correlation is exactly what we expect
to find. It is well known from languages like English that (finite) clause-embedding predicates may allow (92a) or disallow (92b) their embedded complement to be interrogative. In monoclausal configurations, on the other hand, there is no embedded C projection to support an embedded interrogative: only the matrix C is present and hence only a matrix interrogative reading is available. This state of affairs is also reflected in the fact that one of Landau's (2000) classes of PC predicates is the interrogative class, including predicates like *know and wonder: as discussed in previous chapters, these display all the characteristics of a biclausal configuration, as expected given the interrogative (and hence C-containing) status of their complements.

(92) a. John doesn’t know [what Bill saw].
    b. *John doesn’t think [what Bill saw].

This reasoning is basically in the spirit of Tang’s in thinking that complements to the shefa-class lack the necessary clausal structure to support locally interpreted interrogatives, whereas the renwei-class can either allow or disallow such interrogatives depending on the kind of clause they subcategorize for.

The next diagnostic Tang considers is the availability of an embedded A-not-A structure. In Mandarin, one strategy for forming a yes/no question is reduplicating (some portion of) the verb or adjective that heads the predicate and infixing the negation marker bu between the base and the reduplicant, as in (93). (For some relevant literature, see Huang 1991; Ernst 1994a; Gasde 2004; Hagstrom 2006; Law 2006; Huang et al. 2009.)

(93) a. zhangsan lai bu lai?
    Zhangsan come not come
    ‘Is Zhangsan coming?’

    b. zhangsan gao bu gao?
    Zhangsan tall not tall
    ‘Is Zhangsan tall?’

Tang observes that the renwei-class supports embedded A-not-A structures (94a) whereas the shefa-
class does not (94b).\footnote{12}

\begin{align*}
(94) \quad & \text{a. } \text{ni juede [ta hui bu hui qu]?
  
  you think he will not will go}
  
  ‘Do you think he will come or not?’

  b. *ni shefa [qu bu qu]?
  
  you try go not go
  
  Intended: ‘Are you trying to go or not?’ (Tang 1990:331)
\end{align*}

Tang also shows that the asymmetry disappears with dasuan ‘plan’ and zhunbei ‘plan’ (also noted by Hu \textit{et al.} 2001).

\begin{align*}
(95) \quad & \text{a. (?)ni dasuan [qu bu qu]?
  
  you plan go not go}
  
  ‘Do you plan to go or not?’

  b. (?)ta zhunbei [mai bu mai ni-de fangzi]?
  
  he plan buy not buy you-poss house
  
  ‘Does he plan to buy your house or not?’ (Tang 1990:381)
\end{align*}

However, it appears to be the case that the ungrammaticality is robust for ‘core’ restructuring predicates like ‘try’ and modals, as shown in (96). Predicates like dasuan and zhunbei have meanings that could support a biclausal syntax or alternatively might be able to embed extra structure that supports embedded A-not-A questions, similarly to the mixed status of want in English as discussed in chapter 3.

\footnote{12. It is also worth noting that for predicates like juede ‘think’ which disallow embedded questions, the interpretation of the embedded A-not-A structure is necessarily as a matrix question. For predicates like zhidaow ‘know’ that allow both declarative and interrogative complements, the interpretation may also be as an indirect question:}

\begin{align*}
(i) \quad & \text{ni bu zhidao [ta lai bu lai]}
  
  you not know he come not come
  
  ‘You don’t know whether or not s/he’s coming.’ (Li & Thompson 1981:556)
\end{align*}

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Counterexamples aside, Tang suggests that the asymmetry could be a consequence of the A-not-A structure needing C to be licensed. When there is no C in the embedded clause, A-not-A is licensed by the matrix C, thus resulting in a matrix question interpretation.

The next diagnostic concerns the distribution of what Tang calls ‘cleft sentences’. Tang claims that the renwei-class admits complements with a shi-marked cleft construction whereas the shefa-class does not, as in (97).

(97) a. wo shuo [ta shi jintian keyi lai].
   I saw he shi today can come
   ‘It is today that I said that he can come.’

b. *ta bi wo [shi mai fangzi].
   he force I shi buy house (Tang 1990:332)

However, Hu et al. (2001) show that the patterning found in (97b) does not always hold, as in the examples in (98) where shi is grammatical in a controlled complement.

(98) a. wo yuan zhunbei shi he ni yi-ge ren qu.
   I originally prepare shi with you one-cl. person go
   ‘I originally planned to go with you only.’

b. wo qing ni shi chi wufan, bu shi chi wanfan.
   I invite you shi eat lunch not shi eat dinner
   ‘I invited you to lunch, not dinner.’ (Hu et al. 2001:1140)

What this suggests is that the marker shi is not found in a fixed high position in the clause but rather can be inserted relatively low in the structure. In more recent work, Paul & Whitman (2008) argue that this use of shi projects below Tense and can combine with AspP, AuxP or vP. The facts in (98),
together with the analysis argued for by Paul & Whitman (2008), thus suggest that the distribution of *shi* does not tell us anything about (non)finiteness nor about monoclausality/biclausality.

The next diagnostic has to do with the availability of certain kinds of *wh*-words. Tang shows that *zenme* ‘how’, *na-li* ‘where’, *shenme shihou* ‘when’ and *shenme* ‘what’ (as an object) can occur in complements to both the *renwei*-class and the *shefa*-class. But *shei* ‘who’ (as a subject) and *weishenme* ‘why’ are allowed in complements to the *renwei*-class only.13

(99) a.  wo zhidao [shei bu qu].
    I know who not go
    ‘I know who does not go.’

       b.  *ni shefa [shei qu].
         you try who go

(100) a.  wo zhidao [weishenme ta bu neng lai].
    I know why he not can go
    ‘I know why he cannot come.’

       b.  *ni dasuan [weishenme qu]?
         you plan why go (Tang 1990:332–333)

For Tang, the contrast in (99) has to do with the whether the embedded instance of *shei* ‘who’ can receive case (cf. also Li 1985, 1990); on the approach advocated here, on the other hand, it follows from the fact that the *shefa*-class instantiates monoclausal raising and hence there is no position for an embedded subject, interrogative or otherwise. (See section 5.3 above on the distribution of embedded subjects.)14

13. In all of the examples Tang considers, the *renwei*-class has an embedded question interpretation and hence works only for predicates like *zhidao* ‘know’ that allow interrogative complements. The *shefa*-class examples, on the other hand, have a matrix question interpretation.

14. Hu et al. (2001) object to the generalization that the *shefa*-class disallows subject-position *shei* on the basis of the following example:

(i)  ni-men zhunbei [shei qu]?
     you-pl prepare who go
     ‘Who of you plan to go?’ (Hu et al. 2001:1141)
As for the contrast in (100), Tang relates it to the fact that the shefa-class also disallows reason-clause adjuncts in its complements:

(101) a. *\(\text{ta shefa }[\text{yinwei you qian, mai shu}].\)
    he try because have money buy book
    Intended: ‘He tries to buy a book because he has money.’

b. *\(\text{ta bi wo }[\text{yinwei shijian hen duo nian shu}].\)
    he force I because time very many study book
    ‘He forced me to study because there’s a lot of time.’ (Tang 1990:382)

Tang suggests that reason-clause adjuncts and their interrogative counterpart weishenme ‘why’ are licensed by C and hence disallowed in nonfinite contexts, on the view that nonfinite clauses project I but not C. But Tang also suggests that nonfinite clauses must contain C, since they license conditional clauses:

(102) \(\text{wo dasuan }[\text{ruguo tianqi bu hao, jiu bu qu}].\)
    I plan if weather not good then not go
    ‘I plan not to go if the weather is bad.’ (Tang 1990:386)

Further investigation is needed to understand the distributional differences between reason clauses and conditional clauses.

The final diagnostic Tang discusses relates to embedded topicalization: Tang generalizes that renwei-class complements admit embedded topics but shefa-class complements do not:

(103) a. \(\text{ta zhidao }[\text{na yi-ben shu, ni mei mai}].\)
    he know that one-cl book you not PRF buy

Given the equal grammaticality of (ii), (i) could plausibly be a consequence of shei ‘who’ being stranded as the complex constituent ni-men shei ‘you-PL who’ is targeted for raising. See also the discussion of Mandarin ‘partial copy control’ in section 5.3.3 above.

(ii) \(\text{ni-men shei zhunbei qu?}\)
    you-PL who prepare go
    ‘Who of you plan to go?’
‘He knew that, that book, you did not buy.’

b. *ta dasuan [na yi-ben shu, mai].
   he pan that one-cl. book buy  (Tang 1990:333–334)

However, Tang later shows that embedded topics are not always ungrammatical in the shefa-class:

(104)  a. ta jiao wo [fan duo chi yidian].
   he ask I rice many eat some
   ‘He asks me, rice, to eat more.’

b. wo quan ta [shuiguo, zhi chi pingguo].
   I advise he fruit only eat apple
   ‘I advised him, fruits, to eat apples only.’  (Tang 1990:385–386)

And as Hu et al. (2001) point out, (103b) is improved if additional material such as negation or a temporal adverbial is added to the embedded portion:

(105) ta dasuan [na yi-ben shu {bu / mingtian} mai].
    he plan that one-cl. book not / tomorrow buy
    ‘He plans {not} to buy that book {tomorrow}.’ (Hu et al. 2001:1142)

Thus it appears that embedded topicalization does not reliably distinguish the two classes of predicates, and what examples like (104)–(105) mean for the monoclausal approach to the shefa-class is that topicalization can target more than one position in the clause, and not necessarily in the extreme left periphery of the clause. See Paul 2005 for support for the idea that there are TopicPs both above and below IP in the Mandarin clause.

5.7 Conclusion

In summary, the purpose of this chapter was to apply the framework introduced in the first four chapters to Mandarin Chinese, and in so doing, to take a stance in the ongoing debate over whether Mandarin has a finite/nonfinite distinction. I showed that many of those phenomena that have been taken as evidence of a finite/nonfinite split — while subject to important qualifications, most of which are articulated in Hu et al. 2001 — are easily reinterpretable as reflecting a bi-
clausal/monoclausal split, thus supporting my overall claim that the class of control predicates including modal, aspectual and implicative predicates actually constitute monoclausal (raising) structures. Given the great genetic and typological distance between English and Mandarin, this conclusion provides important crosslinguistic support for my core proposals. Chief among the phenomena that point toward this conclusion are the distribution of overt embedded subjects, the distribution and interpretation of embedded modal and aspectual markers, and the availability of focus movement. At the same time, this chapter also identified a number of potentially relevant phenomena that need additional investigation, including constraints on suo clitic climbing, the availability of long-distance passivization, and the (non)finiteness diagnostics outlined by C.C. Tang (1990).
CHAPTER 6
CONTROL AND RESTRUCTURING IN GREEK

6.1 Introduction

In this final chapter, I investigate the syntax of complement control in (modern) Greek. Greek is important to the overall project for two reasons. First, Greek altogether lacks nonfinite complementation, in the sense that verbs always inflect for subject agreement and (seemingly) for tense and aspect. Greek thus seems at least superficially to constitute a threat to my hypothesis that the restructuring status of certain predicates is universal; at the same time, showing that the relevant predicates are amenable to a restructuring analysis even in Greek would constitute strong support for the hypothesis. (In this respect, Greek patterns together with other languages in the Balkan sprachbund such as Albanian (Terzi, 1992; Turano, 1994), Bulgarian (Krapova, 2001), Romanian (Farkas, 1985b; Alboiu, 2008; Alexiadou et al., 2010), and Serbo-Croatian (Zec, 1987). Although this chapter will be mostly concerned with Greek, the hypothesis is that these others languages may be amenable to a similar analysis.)

Second, Greek offers an interesting window into the nature of crosslinguistic variation in the availability of overt embedded subjects with certain kinds of control predicates. A central aim of this dissertation has been to show that there is great crosslinguistic stability in how the semantics of a control predicate relates to its syntax (and that a Cinque 2006-style approach to restructuring helps us make sense of this stability); however, Greek differs from English (and Mandarin; see chapter 5) in allowing overt embedded subjects under the predicates ‘try’ and ‘manage’. Understanding the nature of this point of variation will help shed light on how general principles of the syntax-semantics interface as it pertains to control predicates interacts with language-specific parameters. In the remainder of this introduction, I elaborate on these two points in a bit more detail and summarize the main findings, proposals, and implications of this chapter.

As for the uniformly finite nature of Greek complement clauses and the consequently popular
view that Greek lacks restructuring, the key observation that I capitalize on is that although Greek embedded verbs always inflect for subject agreement and (seemingly) for tense and aspect, certain matrix predicates impose severe restrictions on the range of tense, aspect and agreement inflections the embedded verb can take. This is something that is apparent from the literature on control in Greek: previous approaches to Greek complement control run the full gamut of analytical options with regard to the nature of the controlled position, from pro (Philippaki-Warburton, 1987; Philippaki-Warburton & Catsimali, 1999; Spyropoulos, 2008) to ungoverned / non-case-marked / null-case-marked PRO (Iatridou, 1993; Varlokosta, 1993, 1994; Varlokosta & Hornstein, 1993; Terzi, 1992, 1997) to (regularly) case-marked PRO (Landau, 2004) to movement (Kapetangianni & Seely, 2008; Alexiadou et al., 2010) to clause union (Roussou, 2009). (See also Sadock 2008 for an automodular approach.) With a couple of important exceptions, most of these approaches draw some sort of connection between the obligatoriness of coreference between the embedded subject and a matrix argument (a coreference which constrains agreement on the embedded verb) and the obligatoriness of morphological nonpast tense on the embedded verb. This is shown in (1a–b)\(^1\), which illustrates this correlation between the properties of the embedded tense and the properties of the embedded subject: (1a) disallows embedded past tense and correspondingly disallows an overt disjoint embedded subject; (1b) allows embedded past tense and correspondingly allows an overt disjoint embedded subject. (See below, however, for an important class of exceptions to this correlation.) The class of matrix predicates that pattern with (1a) corresponds roughly to the Exhaustive Control class, and I argue that we can capture the observed connection between the embedded subject and embedded tense in a natural way by appealing to clause-hood as the domain that defines a single tense and a single argument structure. In particular, I take obligatory morphological nonpast tense to indicate the absence of tense altogether (i.e., a kind of syncretism between nonpast tense and tenselessness) and I take obligatory coreference between the embedded subject

\(^{1}\) Following Giannakidou (2009), I adopt the following glossing conventions for Greek verbal temporo-aspectual morphology: \(\text{inp} = \text{imperfective nonpast}\), \(\text{pnp} = \text{perfective nonpast}\), \(\text{ip} = \text{imperfective past}\), \(\text{pp} = \text{perfective past}\).
and the matrix subject to indicate that the entire construction has just one argument structure. Taking the matrix predicates that impose these restrictions to be restructuring predicates, the picture in (2) emerges. (See Roussou 2009 for a similarly spirited ‘clause union’ approach to Greek control, although implemented in a different way.)

(1) a. O Yanis tolmise na {lisi / *elise} (*o Kostas) to provlima. the Yanis dare.pp.3sg na solve.pnp.3sg / solve.pp.3sg the Kostas the problem ‘Yanis dared (*for Kostas) to solve/*have solved the problem’

b. O Yanis lipate pu {lini / elise} (o Kostas) to provlima. the Yanis regret.inp.3sg that solve.inp.3sg / solve.pp.3sg the Kostas the problem ‘Yanis regreted that hei/jj/Kostas solves/solved the problem.’

(2) a. One tense ↔ One argument structure ↔ One clause

b. Two tenses ↔ Two argument structures ↔ Two clauses

For independent support that some control structures in Greek instantiate (2a), I undertake an investigation of emphatic polarity item licensing and inverse scope, phenomena which are ordinarily clause-bound in Greek but which appear to be able to cross clause boundaries under some conditions (see Giannakidou & Quer 1997 and Farkas & Giannakidou 1996, respectively). If this view is correct, it has at least two interesting implications. The first is that the appearance of morphological tense on a verb does not necessarily indicate a projection of T; rather, morphological nonpast tense in Greek acts as a ‘default’ when T does not project. This can be understood as a kind of syncretism. Second, there is crosslinguistic variation in how subject agreement distributes throughout the clause: in English, agreement is a property of finite clausehood, so Agr projects just one per finite clause. In Greek, on the other hand, Agr projects over each verb: following a suggestion of Cinque’s in discussing similar facts in Salentino and Serbo-Croatian, agreement in such languages is “nothing other than a way to render the stem a well-formed morphological word” (Cinque 2006:21).

There is, however, an important class of exceptions to the correlation between embedded sub-
jects and embedded tense: predicates like *thelo* ‘want’, *prospatho* ‘try’ and *kataferno* ‘manage’ admit overt disjoint embedded subjects but disallow embedded past tense, as seen in (3).

(3) a. O Yanis theli na {lisi / *elise} (o Kostas) to provlima. the Yanis want.INP.3SG NA solve.PNP.3SG / solve.PP.3SG the Kostas the problem ‘Yanis wants for Kostas to solve the problem.’

b. O Yanis prospathise/katafera na {lisi / *elise} (o Kostas) to provlima. the Yanis try/manage.PP.3SG NA solve.3SG.PNP / solve.PP.3SG the Kostas the problem ‘Yanis tried/managed for Kostas to solve the problem.’

I take these facts as an opportunity to revisit the main claim from chapter 3 that ‘want’ is unique among restructuring predicates in being able to embed the silent main verb $\emptyset$ *have* which allows it to simulate certain properties of biclausal configurations such as Partial Control and the availability of overt embedded subjects. A question that this approach raised is how to reign in the distribution of $\emptyset$ *have* so that it cannot combine with other restructuring predicates, and in chapter 3 I suggested that the answer is semantic: following what Sæbø (2009) proposes for overt *have*, I proposed that the semantic function of $\emptyset$ *have* is simply to introduce an argument, the burden falling on the rest of the structure to use that argument by providing a variable for it to bind. I argued that ‘want’ is unique among restructuring predicates in relating an attitude holder to an arbitrary proposition; the argument introduced by $\emptyset$ *have* can provide that attitude holder. With other restructuring predicates, there is either no attitude holder at all (e.g., aspectual predicates, possibly root modals), or there is an attitude holder that must play a role in the prejacent event description (‘try’, ‘manage’). Greek provides further support for this view in the sense that that the meanings of sentences like (3b) are not what we would predict given this approach to $\emptyset$ *have* coupled with recent semantic proposals for ‘try’ (Sharvit, 2003; Grano, 2011); rather, (3b) crucially involves a causative component: the matrix subject must not only bear the right kind of attitude (which for Sharvit 2003 involves an appropriate ranking of the subject’s ‘success’ worlds and for Grano 2011 involves an ordering source based on the subject’s intentions) but must also be engaged in a causative capacity in the prejacent event description. This is in contrast to sentences involving ‘want’ like (3a), which do not involve any
kind of causative component. From this I conclude that sentences like (3b) involve a silent predicate CAUSE that provides a role for the argument introduced by $\emptyset_{have}$. There is evidence internal to Greek that CAUSE is available only as a ‘last resort’ strategy, and crosslinguistic variation in the acceptability of embedded subjects with ‘try’ (and ‘manage’) can be modeled as crosslinguistic variation in the availability of CAUSE in certain kinds of configurations. The primary theoretical implication is that although the semantics of an embedding predicate largely determines its syntax, a small and distributionally restricted inventory of morphemes like CAUSE may be responsible for certain points of variation.

The organization of the rest of this chapter is as follows. Section 2 reviews the core facts, drawing largely on Spyropoulos’s (2008) pretheoretical division of Greek embedding predicates into three classes depending on how they impose restrictions on the embedded subject and the embedded tense/aspect. Section 3 spells out the core proposal, accounting for the facts in section 2 via a split between monoclusal and biclausal structures. Section 4 investigates the extent to which we can appeal to emphatic polarity item licensing and inverse scope as independent diagnostics for monoclusality. Section 5 enumerates and defuses a number of anticipated objections to the analysis within the context of current debate over the syntax of Greek control. Section 6 compares my approach to previous approaches in the literature. Section 7 extends the analysis to the problematic class of predicates including ‘want’, ‘try’ and ‘manage’. Finally, section 8 concludes.

6.2 The core facts

In the spirit of much previous work on Greek complement control, I will take the following three questions as central:

(4) a. How does the choice of matrix predicate affect the form and interpretation of the tense of the embedded predicate?

b. How does the choice of matrix predicate affect the form and interpretation of the subject
of the embedded predicate?

c. How do (4a) and (4b) relate to each other?

As a first approximation of the answers to these questions, I will follow Spyropoulos (2008) in making a three-way distinction in Greek embedding predicates with respect to how they impose restrictions on the embedded tense: INDEPENDENT TENSE, ANAPHORIC TENSE, and DEPENDENT TENSE. (Spyropoulous credits this three-way distinction to four earlier works on Greek clausal complementation: Householder et al. 1964; Ingria 1981; Varlokosta 1994; Roussou 2004.) We will see, following Spyropoulos, how these different temporal categories correlate with properties of the embedded subject.

As mentioned in the introduction, previous approaches to control in Greek run the full gamut of analytical options, and while I will try to be as theoretically neutral as possible in this descriptive overview, I owe a great debt to previous analyses for their data, descriptive generalizations, and insights, especially Philippaki-Warburton 1987; Terzi 1992, 1997; Iatridou 1993; Varlokosta 1993, 1994; Varlokosta & Hornstein 1993; Philippaki-Warburton & Catsimali 1999; Landau 2004; Kapetangianni & Seely 2008; Spyropoulos 2008; Roussou 2009; Alexiadou et al. 2010. For a discussion of the specific analyses instantiated in these works, see section 6.6 below, where I compare my own proposal to these previous ideas.

In what follows, I begin with a general background on the syntax of Greek complement clauses (section 6.2.1) and then turn to the categories of INDEPENDENT TENSE (section 6.2.2), ANAPHORIC TENSE (section 6.2.3), and DEPENDENT TENSE (section 6.2.4). Section 6.2.5 concludes with a summary of the data in table form.

6.2.1 Background on Greek complement clauses

In Greek, complement clauses are uniformly finite in the sense that the embedded verb obligatorily shows subject agreement and (seemingly) tense and aspect morphology. Complement clauses are introduced by particles that are in complementary distribution with each other. The most important
of these particles are exemplified in (5), taken from Roussou 2010.

(5)  
   a. Ksero oti o Yanis elise to provlima.  
      know.INP.1SG OTI the Yanis solve.PP.3SG the problem  
      ‘I know that Yanis solved the problem.’
   b. Xerome pu o Yanis elise to provlima.  
      be.glad.INP.1SG PU the Yanis solve.PP.3SG the problem  
      ‘I’m glad that Yanis solved the problem.’
   c. Anarotjeme an o Yanis elise to provlima.  
      wonder.INP.1SG AN the Yanis solve.PP.3SG the problem  
      ‘I wonder if Yanis solved the problem.’
   d. Thelo na liso to provlima.  
      want.INP.1SG NA solve.PNP.1SG the problem  
      ‘I want to solve the problem.’ (Roussou 2010:582–583)

The so-called ‘indicative’ particles are oti and pu, oti being used in contexts where (roughly speaking) languages that have morphologically marked mood distinctions would call for indicative mood, and pu being used in complements to factive predicates (Christidis, 1981; Roussou, 1994; Varlokosta, 1994). As illustrated in (5c), an is used for interrogative complements. Finally, na is the so-called ‘subjunctive’ particle, found in contexts of obligatory control and in contexts where (roughly speaking) languages with mood distinctions would call for subjunctive mood. While it is more less uncontroversial to analyze oti, pu and an as complementizers (i.e., instances of C), na has been alternatively analyzed as a complementizer (Agouraki, 1991; Tsoulas, 1993), a mood or modality head (Philippaki-Warburton, 1992, 1998; Rivero, 1994; Giannakidou, 1998, 2009), or a low C head in an articulated Rizzi 1997-style CP-layer (Roussou, 2000).

Although the matrix predicate constrains particle choice, it does not always determine it. With semi-factive predicates like thiname ‘remember’, oti and pu occur in variation (Giannakidou, 2009). With elpizo ‘hope’, both oti and na are found. Epistemic predicates allow both oti and na, though use of na requires that the matrix verb be in the present tense and, in the case of nomizo ‘think’, that the matrix clause be negated or interrogative (Roussou 2009; see also Giannakidou &

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Quer 1997 on *pistevo* ‘believe’). Emotive factive predicate like *xerome* ‘be glad’ and *lipame* ‘regret’ can embed *na* instead of *pu* just in case their complement is generic/habitual (Giannakidou, p.c.). In some cases, particle choice corresponds to two distinct meanings for the matrix predicate; for example, particle choice with *ksero* ‘know’ tracks the ‘knowing that’ (propositional attitude) vs. ‘knowing how’ (dynamic modality) distinction (Roussou, 2009):²

(6) Kseri oti/na odhiji.  
  know.inp.3sg oti/na drive.inp.3sg 
  with *na*: ‘S/he knows how to drive.’

  with *oti*: ‘S/he knows how s/he drives.’ (Roussou 2009:1814)

Another item that is in complementary distribution with mood particles is *ke* ‘and’, an item normally used for coordination but that can also replace the mood particle *na* under some conditions, giving rise to an actuality entailment (Kapetangianni, 2010; Giannakidou & Staraki, to appear). This use of *ke* has been alternatively analyzed as a true coordinate structure (Giannakidou & Staraki, to appear) and a controlled indicative complement structure (Kapetangianni, 2010). For my purposes, it will suffice to note that *ke* appears not to alter the control/obviation properties of the higher predicate; as we will see below, *prospatho* ‘try’ in a *na*-structure admits obviation under some conditions and correspondingly admits obviation in a *ke*-structure as well (7a), whereas *boro* ‘be able’ in a *na*-structure never admits obviation and correspondingly does not in a *ke*-structure either (7b).

(7) a. O Yanis prospathise ke pire/pirame to epidoma.  
  the Yanis try.pp.3sg KE take.pp.3sg/1pl the bonus 
  ‘Yanis tried and got the bonus’ / ‘Yanis tried and we got the bonus.’

b. O Yanis borese ke pire/??pirame to epidoma.  
  the Yanis be.able.pp.3sg KE take.pp.3sg/1pl the bonus 
  ‘John was able to get the bonus’ / ?? ‘John was able for us to get the bonus.’

2. Whether or not ‘knowing how’ can be subsumed under propositional knowledge (‘knowing that’) is in fact a matter of ongoing debate in the philosophy of language: see Stanley 2011 for a recent take on this.
For recent overviews of Greek particle choice and its relationship to the more general and cross-linguistically relevant issue of mood choice, see Giannakidou 2009; Roussou 2010. In what follows, I will mostly be focusing on na-clauses since it is a subset of these that exhibit control properties, but particle choice will continue to be relevant in the following discussion insofar as it interacts with the form and interpretation of embedded tense/aspect and of embedded subjects.

6.2.2 INDEPENDENT TENSE

In the first class of matrix predicates, the tense of the embedded predicate is both morphosyntactically and semantically independent from the tense of the matrix predicate. The embedded predicate may bear past-tense morphology and correspondingly receive an anterior interpretation, as in (8a), and it may also bear non-past morphology and correspondingly receive a simultaneous or posterior interpretation, as in (8b).

(8) a. Elpizo na eftase soos.  
    hope.INP.1SG NA arrive.PP.3SG safe.NOM  
    ‘I hope that he arrived safe.’

    b. Elpizo na fiasi soos.  
    hope.INP.1SG NA arrive.PNP.3SG safe.NOM  
    ‘I hope that he arrives/will arrive safe.’ (Spyropoulos 2008:161)

Embedded aspect is also free with this class of predicates: as illustrated in (9), any combination of tense and aspect is licit:

(9) Elpizo na grafo / grapso / egrafa / egrapsa.  
    hope.INP.1SG NA write.INP.1SG / write.PNP.1SG / write.IP.1SG / write.PP.1SG  
    ‘I hope to write / that I wrote.’

3. However, the availability of embedded PERFECTIVE NONPAST — which is in general banned in matrix contexts and must always be subordinated under a mood particle — is restricted to a subset of embedding predicates. See Giannakidou 2009 for a theoretical account.
With this class of predicates, the embedded subject need not correspond to any of the matrix arguments. When the embedded subject is covert and the embedded verb has the same agreement features as the matrix predicate, the embedded subject is optionally identified with the matrix subject, as illustrated in (10a). As documented by Kapetangianni & Seely (2008) (see also Terzi 1992; Iatridou 1993; Varlokosta & Hornstein 1993; Landau 2004), this unexpressed subject bears all the hallmarks of pro: Kapetangianni and Seely show that it can be interpreted either anaphorically or deictically (10a), it can be replaced by an overt DP (10b), it can take a non-c-commanding (10c) or split (10d) antecedent, it supports both strict and sloppy readings in elliptical contexts (10e), and it can be interpreted either de re or de se (10f).

(10) a. O Yanis elpizi na figi.
    the Yanis hope.INP.3SG NA leave.PNP.3SG
    ‘Yanis hopes s/he$_{i/j}$ leaves.’

b. O Yanis elpizi na figi i Maria.
    the Yanis hope.INP.3SG NA leave.PNP.3SG the Maria
    ‘Yanis hopes Mary leaves.’

c. I mitera tu Yani elpizi na diavasi ena vivlio.
    the mother the GEN Yanis GEN hope.INP.3SG NA read.PNP.3SG a book
    ‘Yanis’s mother hopes he$_i$ reads a book.’

d. O Yanis nomizi oti i Maria elpizi na diavasun ena vivlio.
    the Yanis think.INP.3SG that the Maria hope.INP.3SG NA read.PNP.3PL a book
    ‘Yanis thinks that Mary$_j$ hopes they$_{i+j}$ read a book.’

e. Elpizo na figo, to idhio ke o Yanis.
    hope.INP.1SG NA leave.PNP.1SG the same and the Yanis
    ‘I hope to leave and Yanis$_i$ does too ⟨hope I leave⟩ OR ⟨hope he$_i$ leaves⟩.’

f. O Atichis elpizi na kerdisi to metalio.
    the Unfortunate hope.INP.3SG NA win.PNP.3SG the medal
    ‘The Unfortunate hopes to win the medal.’ (de re OR de se)

    (Kapetangianni & Seely 2008:143)

In summary, this class of predicates embed complements whose tense and subject are both freely formed and interpreted. Aside from elpizo ‘hope’, other predicates in this class include
propositional predicates like *pistevo* ‘believe’, interrogative predicates like *anarotjeme* ‘wonder’, and factive predicates like *xerome* ‘be glad’.

### 6.2.3 ANAPHORIC TENSE

In this class of matrix predicates, the tense and aspect of the embedded predicate is both morphosyntactically and semantically restricted. Morphosyntactically, the tense of the embedded predicate is restricted to nonpast, regardless of matrix tense, and the aspect is determined by the matrix predicate. The verb *arxizo* ‘begin’, for example, always takes a nonpast imperfective complement regardless of its own tense, as illustrated in (11). The verb *tolmo* ‘dare’, in contrast, always takes a nonpast perfective complement (12).

(11)

a. **Arxizo** na grafo / *grapso / *egrafa / *egrapsa.  
begin.inp.1sg na write.inp.1sg / write.pnp.1sg / write.ip.1sg / write.pp.1sg  
‘I begin to write.’

b. **Arxisa** na grafo / *grapso / *egrafa / *egrapsa.  
begin.pp.1sg na write.inp.1sg / write.pnp.1sg / write.ip.1sg / write.pp.1sg  
‘I began to write.’ (Roussou 2009:1815)

(12)

a. **Tolmo** na *grafo / grapso / *egrafa / *egrapsa.  
dare.inp.1sg na write.inp.1sg / write.pnp.1sg / write.ip.1sg / write.pp.1sg  
‘I dare to write.’

b. **Tolmisa** na *grafo / grapso / *egrafa / *egrapsa.  
dare.pp.1sg na write.inp.1sg / write.pnp.1sg / write.ip.1sg / write.pp.1sg  
‘I dared to write.’

Consistent with this morphosyntactic restriction, the semantics of the embedded tense is obligatorily identified with matrix tense, as evidenced for example by the impossibility of a future-oriented temporal modifier in the complement to a present-tense matrix predicate:

(13)

a. **Arxizo** na grafo (*avrio).  
begin.inp.1sg na write.inp.1sg tomorrow  
‘I begin to write (*tomorrow).’
b. Tolmo na grapso (*avrio).
dare_INP.1SG NA write_PNP.1SG tomorrow
‘I dare to write (*tomorrow).’

As for the properties of the embedded subject with this class, as documented by Kapetangianni & Seely (2008) (see also Terzi 1992; Iatridou 1993; Varlokosta & Hornstein 1993; Landau 2004), the unexpressed subject of the embedded predicate is obligatorily identified with the matrix subject, as seen in (14a). It cannot be replaced by an overt DP (14b) (though see below for qualification), it cannot have a non-c-commanding (14c) or split (14d) antecedent, and it admits only sloppy identity in elliptical contexts (14e).

(14) a. O Yanis kseri na kolimbai.
the Yanis know_INP.3SG NA swim_INP.3SG ‘Yanis, knows how Δ_i/∗j to swim.’

b. *O Yanis kseri na kolimbai i Maria.
the Yanis know_INP.3SG NA swim_INP.3SG the Maria
Intended: ‘Yanis knows how Maria to swim.’

c. *O filos tu Yani kseri na xorevi.
the friend the_GEN Yanis GEN know_INP.3SG NA dance_INP.3SG ‘Yanis,’s friend_j knows how Δ_i/∗j to dance.’

d. *O Yanis nomizi oti i Maria kseri na vothisoun o enas ton allo.
the Yanis think_INP.3SG that the Maria know_INP.3SG NA help_INP.3PL each other.’
Intended: ‘Yanis think that Mary knows how to help each other.’

e. O Yanis kseri na xorevi, to idhio ke o Vassilis.
the Yanis know_INP.3SG NA dance_INP.3SG the same and the Vassilis
‘Yanis, knows how to dance, and so does Vassilis_j (know how Δ_i/∗j to dance)’

(Kapetangianni & Seely 2008:144–146)

Although the embedded subjects under predicates in this class are obligatorily anaphoric, Spyropoulos (2008) (see also Philippaki-Warburton & Catsimali 1999; Alexiadou et al. 2010) documents that they can under some conditions be overt: they can be realized by a strong pronoun anaphoric to an overt matrix subject (15a), or a strong pronoun or full NP anaphoric to a null ma-
troc subject (15b–c):

(15) a. O Yanis, kseri na xorevi ki aftos_{i/ej} kalo tsamiko. the Yanis  know.INP.3SG NA dance.INP.3SG and he good tsakimo ‘Yanis knows how to dance tsamiko well.’

b. Δ_{i} kseri na xorevi aftos_{i/ej} kalo tsamiko? know.INP.3SG NA dance.INP.3SG he good tsamiko ‘Does he know how to dance tsamiko well?’

c. Δ_{j} kseri na xorevi o Yanis_{i/ej} kalo tsamiko? know.INP.3SG NA dance.INP.3SG the Yanis good tsamiko ‘Does Yanis know how to dance tsamiko well?’ (Spyropoulos 2008:167)

For the most part I will be setting facts like (15) aside in the analysis, though see section 6.5.2 for more discussion on the implications of these data.

In summary, this class of predicates embed complements whose tense and subject are formed and interpreted in a very restricted way. Predicates in this class include aspectual predicates like arxizo ‘begin’ and sinexizo ‘continue’, (root) modal predicates like ksero ‘know (how)’ and boro ‘be able’, and implicative predicates like tolmo ‘dare’ and thimame ‘remember’.

6.2.4 DEPENDENT TENSE

The third and trickiest class of predicates occupies an intermediate position between the first two classes with respect to the freeness of the embedded tense and of the embedded subject. This class of predicates also corresponds more or less to the class of predicates identified by Giannakidou (2009) as ‘strong intensional’ (in the sense of Farkas 1985a, 1992) and ‘nonveridical’.

Turning first to embedded tense and aspect, this class is like the previous class in that the embedded tense must be morphologically nonpast. It differs, though, in two ways. First, the embedded aspect is not restricted: both imperfective and perfective nonpast are grammatical:

(16) Thelo na grafo / grapso / *egrafa / *egrapsa. want.INP.1SG NA write.INP.1SG / write.PNP.1SG / write.IP.1SG / write.PP.1SG
‘I want to write.’

Second, although the embedded tense is morphologically restricted, it need not be semantically anaphoric to matrix tense: in particular, it may be futurate with respect to the tense of the embedding predicate. (See Giannakidou 2009 for the formal semantic details.) This is evidenced by the grammaticality of conflicting temporal modifiers like simera ‘today’ and avrio ‘tomorrow’ at the matrix and embedded levels respectively, as in (17). (17b–c) are of particular interest since they show a point of crosslinguistic variation between Greek and English with respect to the availability of future-orientation with ‘try’ and ‘manage’. See chapter 4 for more on the English facts.

(17) a. O Kostas theli simera na odhijisi avrio.
   the Kostas want.INP.3SG today NA drive.PNP.3SG tomorrow
   ‘Kostas wants today to drive tomorrow.’

   b. O Kostas prospathise simera na figi avrio.
      the Kostas try.PP.3SG today NA leave.PNP.3SG tomorrow
      ‘Kostas tried today to leave tomorrow.’

   c. O Kostas katafere simera na figi avrio.
      the Kostas manage.PP.3SG today NA leave.PNP.3SG tomorrow
      ‘Kostas managed today to leave tomorrow.’

Turning now to the form and interpretation of the embedded subject, this class behaves in a non-uniform way. Spyropoulos (2008) in fact identifies three distinct patternings within this class. thelo ‘want’ exemplifies one of these patternings. With thelo, the embedded subject is just as free as it is for the predicates in the independent tense class: it can be overt and exhaustively disjoint from the matrix subject, as in (18a) (the case on the embedded subject here is nominative, though it may also appear in accusative case under some conditions: see Kotzoglou & Papangeli 2008), and it can also be covert, in which case it is optionally coreferential with the matrix subject, as in (18b).

(Though see Kapetangianni 2010 for experimental evidence that disjoint reference in structures like (18b) is not as easily attained as disjoint reference with equivalent structures that involve matrix predicates from the independent tense class like elpizo ‘hope’.)
(18)  a. O Kostas theli na erthi o Yanis.  
the Kostas want.INP.3SG NA come.PNP.3SG the Yanis  
‘Kostas wants Yanis to come.’

b. O Kostasi theli na erthi $\Delta_{i/j}$.  
the Kostas want.INP.3SG NA come.PNP.3SG  
‘Kostas wants (him/her) to come.’

_prospatho_ ‘try’ and _kataferno_ ‘manage’ exemplify another kind of patterning. With these predicates, as with _thelo_, there can be an overt embedded subject that is totally disjoint from the matrix subject, as in (19). But what sets these predicates apart from _thelo_ ‘want’ is that when the embedded subject is covert, it can be disjoint only if the matrix and embedded verbs mismatch for subject agreement, as in (20a). When both verbs bear the same subject agreement features, as in (20b), then there is obligatory coreference. (For more on the peculiar properties of _prospatho_ ‘try’, see also Terzi 1992; Joseph 1992; Roussou 2009, and section 6.7 below.)

(19)  a. O Kostas prospathise na dhioristi o jios tu stin trapeza.  
the Kostas try.PP.3SG NA be.appointed.INP.3SG the son his in.the bank  
‘Kostas tried for his son to be appointed in the bank.’

b. O Kostas katafere na fiji o jios tu.  
the Kostas manage.PP.3SG NA leave.INP.3SG the son his  
‘Kostas managed for his son to leave.’ (Roussou 2009:1817)

(20)  a. O Yanis prospathise na erthun, ala afti den ta kataferan.  
the.NOM Yanis.NOM try.PP.3SG NA come.INP.3PL but they NEG them.CL manage.PP.3PL  
‘John tried for them to come, but they didn’t make it.’ (Spyropoulos 2008:165)

b. O Nikos$\Delta_j$ prospathise na fiji  
the.NOM Nikos.NOM try.PP.3SG NA leave.INP.3SG  
‘Nikos tried to leave.’ (Spyropoulos 2008:164)

To complicate matters further, Spyropoulos identifies yet a third pattern, exemplified by _skopevo_ ‘intend’, which imposes even stricter conditions on the embedded subject. This kind of predicate disallows exhaustively disjoint embedded subjects, whether overt or covertly signalled via agreement morphology, as in (21a). But as we see in (21b), this predicate admits a partially disjoint
embedded subject: here the matrix predicate has a 3sg subject and the embedded predicate shows 3pl agreement morphology. In other words, this predicate forces control, but the control can be either exhaustive or partial.

(21) a. Skopevo na ertho / *erthis / *erthi (*i Maria). intend.inp.1sg na come.inp.1sg / come.inp.2sg / come.inp.3sg the Maria
   ‘I intend to come.’

   b. O Yanis mu ipe oti i Maria spokevi na pane ja the Yanis me.gen tell.pp.3sg that the Maria intend.inp.3sg na pane.inp.3pl for psonia tin triti. shopping the Tuesday
   ‘Yanis told that Maria intends for them to go shopping on Tuesday.’ (Spyropoulos 2008:166)


6.2.5 Summary

Table 6.1 presents a descriptive summary of how the choice of matrix predicate constrains the choice of embedded complementizer or mood particle, tense, aspect, and subject.

In what follows, I will focus primarily on analyzing the independent tense and anaphoric tense predicates, leaving a discussion of the dependent tense predicates to section 6.7.

6.2.6 A comparison to Yiddish

The Greek data considered above invite a comparison to Yiddish, which exhibits some similarities that are significant insofar as they establish the existence of (certain aspects of) the Greek phenom-
Table 6.1: Summary of Greek data (Key: free = disjoint reference always available; semi-free = disjoint reference under agreement feature mismatch or overt subject only; fixed = obligatory exhaustive control; semi-fixed = obligatory exhaustive or partial control)

<table>
<thead>
<tr>
<th>C/Prt</th>
<th>T</th>
<th>Asp</th>
<th>Subj</th>
</tr>
</thead>
<tbody>
<tr>
<td>pistevo ‘believe’</td>
<td>oti</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>elpizo ‘hope’</td>
<td>oti/na</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>ksero ‘know (that)’</td>
<td>oti</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>perimeno ‘expect’</td>
<td>oti</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>anarotjeme ‘wonder’</td>
<td>an</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>xerome ‘be glad’</td>
<td>pu</td>
<td>INDEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>ksero ‘know (how)’</td>
<td>na</td>
<td>ANAPHRIC</td>
<td>IMP</td>
</tr>
<tr>
<td>arxizo ‘begin’</td>
<td>na</td>
<td>ANAPHRIC</td>
<td>IMP</td>
</tr>
<tr>
<td>stamatao ‘stop’</td>
<td>na</td>
<td>ANAPHRIC</td>
<td>IMP</td>
</tr>
<tr>
<td>sinexizo ‘continue’</td>
<td>na</td>
<td>ANAPHRIC</td>
<td>IMP</td>
</tr>
<tr>
<td>tolmo ‘dare’</td>
<td>na</td>
<td>ANAPHRIC</td>
<td>PRF</td>
</tr>
<tr>
<td>prospatho ‘try’</td>
<td>na</td>
<td>DEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>kataferno ‘manage’</td>
<td>na</td>
<td>DEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>thelo ‘want’</td>
<td>na</td>
<td>DEPENDENT</td>
<td>IMP/PRF</td>
</tr>
<tr>
<td>skopevo ‘intend’</td>
<td>na</td>
<td>DEPENDENT</td>
<td>IMP/PRF</td>
</tr>
</tbody>
</table>

In particular, as observed by Sadock (2012b), Yiddish has a verb betn ‘ask’/‘request’ whose complement must be headed by zoln ‘should’ and must have as its subject an argument coreferent with the matrix object:

(22) Er bet mikh (*az) ikh/*si zol mitkumen.
    he ask me that I/*she should come.along
    ‘He asks of me that I come along.’ (Sadock 2012b) 

The resemblance to Greek here is twofold. First is the obligatory coreference between the subject of the embedded clause and an argument of the matrix clause, which holds despite the fact that the embedded clause is finite (in the sense that zoln ‘should’ bears agreement: see Hansen & Birzer 2012 for a useful overview of the Yiddish modal system). This is just like what we find with the Greek ANAPHRIC TENSE predicates. Second is the obligatory presence of the modal zoln ‘should’ and
the obligatory absence of the normal complementizer az ‘that’: this is reminiscent of the obligatory presence of the particle na in Greek control contexts and its complementary distribution with the complementizer oti ‘that’. To the extent that the ungrammaticality of az indicates the absence of a full embedded clause structure, the Yiddish data provide crosslinguistic support for my proposal below that Greek control structures are monoclausal.

That being said, the analogy between Greek and Yiddish breaks down partly in looking at veln ‘want’; as before, the complementizer az ‘that’ is excluded, but the difference here is that the modal zoln ‘should’ is obligatorily present in obviative contexts (23a) but not in control contexts (23b):

\[(23)\]
\[
a. \text{Ikh vil } (*az) \text{ er } *(zol) \text{ geyn.} \\
   \text{I want that he should go} \\
   \text{‘I want him to go.’} \\

b. \text{Ikh vil } (*az) \text{ geyn.} \\
   \text{I want that go} \\
   \text{‘I want to go.’} \quad \text{(Sadock 2012b)} \\
\]

Taken together, these data suggest that Yiddish is somewhere in the middle between the extremes of Greek (where embedded clauses are always finite regardless of whether a control relation is present) and English (where control is contingent on nonfiniteness).

### 6.3 The core proposal

As will be discussed in section 6.6 below, most approaches to Greek complement control starting with Iatridou 1993 recognize a connection between properties of the embedded subject and properties of the embedded tense, and encode this connection via some theoretical apparatus that links properties of T to properties of PRO or pro. The approach to control developed in the preceding chapters affords an alternative way of viewing this connection that is close in spirit to Roussou 2009 although implemented in a different way. In particular, I propose to take ‘clausehood’ as the theoretical apparatus responsible for the link. Obligatory coreference between the subject of the
embedded predicate and the subject of the embedding predicate indicates that the entire sentence is associated with just one argument structure, and obligatory coreference between the embedded (morphologically nonpast) tense and the matrix tense indicates that the entire sentence is associated with just one tense. This is expected if the sentence is monoclausal, given that a single clause has just one argument structure and one tense. Conversely, the availability of a disjoint embedded subject and an independent embedded tense both signal biclausality. This core idea is illustrated in (24).

(24)  
\begin{align*}
\text{a. One argument structure} & \iff \text{One tense} \iff \text{One clause} \\
\text{b. Two argument structures} & \iff \text{Two tenses} \iff \text{Two clauses}
\end{align*}

I implement this proposal by adopting the basic structures in (26a–b) for sentences like (25a–b) respectively.

(25)  
\begin{align*}
\text{a. o Yanis tolmise na figi.} \\
\text{the Yanis dare/pp.3sg na leave/pnp.3sg} \\
\text{‘Yanis dared to leave.’} & \quad \text{ANAPHORIC TENSE/MONOCLAUSAL} \\
\text{b. o Yanis elpizi na figi.} \\
\text{the Yanis hope/inf.3sg na leave/pnp.3sg} \\
\text{‘Yanis hopes to leave.’} & \quad \text{INDEPENDENT TENSE/BICLAUSAL}
\end{align*}
(26) ANAPHORIC TENSE → MONOCLAUSAL

(27) INDEPENDENT TENSE → BICLAUSAL
The biclausal structure in (27) is a more or less standard analysis for clausal complementation in Greek: the embedded clause contains its own projection of C, Agr, T, and Asp, and contains a pro subject. The structure in (26), however, has a few features that are worth commenting on. First, departing from much previous work, I propose that there is no embedded projection of T, despite the fact that the embedded verb form has the same morphological shape as that used for nonpast. This can be understood as a kind of syncretism: nonpast Tense and the absence of Tense have the same morphological exponent, as schematized in (28a–b).

(28)  
   a. leave + T:pst + Asp:prf + Agr:3sg → efige  
   b. leave + T:nonpst + Asp:prf + Agr:3sg → figi  
   c. leave + Asp:prf + Agr:3sg → figi

See Giannakidou (2009: note 2) for a similar suggestion: starting from the observation that structures introduced by na are used both for subjunctive/future-oriented/nonveridical complements and for veridical complements to predicates like see and start, Giannakidou suggests that because Greek lacks nonfinite complementation, it must resort to using na structures for “complements that correspond to ‘smaller’ structures such as bare infinitives or gerunds”. My suggestion here is in a similar spirit but with a reversed causality: I suggest that it is not that the lack of nonfinite complementation that causes syncretism between nonpast tense and tenselessness; rather, it is the syncretism that causes (the appearance of) a lack of nonfinite complementation.

The second consequence worth mentioning is that in Greek, Agr may project more than once per clause. In this respect, Greek occupies one point in a spectrum of crosslinguistic variation in how Agr heads get distributed throughout the clause, and we can usefully compare Greek with English and Mandarin, which, taken together, reflect three different ways that subject agreement is distributed throughout the clause: in Greek, Agr co-occurs with every verbal head in the clause, including both the main verb and verbal functional heads that project over it; following a suggestion that Cinque (2006) makes for a similar phenomenon in Salentino and Serbo-Croatian, agreement in
such languages is “nothing other than a way to render the stem a well-formed morphological word” (Cinque 2006:21). In English, Agr occurs just once per finite clause at the highest level; subject agreement is a requirement on finite clausehood. In Mandarin, Agr does not occur at all.

(29) a. O Yanis tolmise na arxisi na anoigi tin porta.
   the Yanis dare.pp.3SG NA begin.pnp.3SG NA open.inp.3SG the door
   ‘Yanis dared to begin to open the door.’

   Greek

   b. John dared to begin to open the door.

   English

   c. zhangsan gan kaishi kai men.
      Zhangsan dare begin open door
      ‘Zhangsan dared to begin to open the door.’

   Mandarin

(30) a. **GREEK**
   
   \[ \text{Agr} \]
   \[ \text{F} \]
   \[ \text{Agr} \]
   \[ \text{F} \]
   \[ \text{Agr} \]
   \[ \text{V} \]

   b. **ENGLISH**
   
   \[ \text{Agr} \]
   \[ \text{F} \]
   \[ \text{F} \]
   \[ \text{V} \]

   c. **MANDARIN**
   
   \[ \text{F} \]
   \[ \text{F} \]
   \[ \text{V} \]

A third feature of the analysis is that Asp may project more than once per clause. As discussed in section 6.2.3 above, Greek anaphoric tense predicates determine the aspectual morphology on the lower verb: arxizo ‘begin’, for example, requires an imperfective complement, as seen in (31a), whereas tolmo ‘dare’ requires a perfective complement, as seen in (31b). Given this covariation, I assume that the embedded aspectual morphology corresponds to an Asp projection in syntax. This, however, is no different from analogous structures in English, where the appearance of progressive and perfective morphology in data like (32) indicate an embedded aspectual position as well. (I will not take a stance here on whether the embedded aspectual projection is semantically active: the fact that its status as perfective or imperfective is determined by the embedding predicate could
indicate that it is an arbitrary selectional property that does not figure in the semantics; on the other hand, it could be that the embedding predicates have semantics that cause them to be compatible only with one or the other kind of aspect in their complement.)

(31) a. Arxizo na grafo / *grapso
    begin.INP.1SG NA write.INP.1SG / write.PNP.1SG
    ‘I begin to write.’

   b. Tolmo na *grafo / grapso
    dare.INP.1SG NA write.INP.1SG / write.PNP.1SG
    ‘I dare to write.’

(32) a. John managed to be closing the door (right as someone was trying to walk in).

   b. John managed to have closed the door (right before someone walked in).

   Finally, departing from previous work taking the particle na to be a complementizer (Agouraki, 1991; Tsoulas, 1993), a mood or modality head (Philippaki-Warburton, 1992, 1998; Rivero, 1994; Giannakidou, 1998, 2009), or a low C head in an articulated Rizzi 1997-style CP-layer (Roussou, 2000), I take the position that—at least under some circumstances—na projects somewhat lower in the structure, analogous to the role of English infinitival marker to and the so-called Romance ‘prepositional complementizers’ which show up in restructuring configurations as well. (See chapter 1.)

   In summary, Greek anaphoric tense/Exhaustive Control structures differ from English Exhaustive Control structures in two ways. First, in Greek, subject agreement projects with each predicate, whereas in English, subject agreement projects only once. Second, in Greek, the lower predicate surfaces with a nonpast inflection as a ‘morphological default’ since there is no embedded T projection, whereas in English, the bare form of the verb is used. Concentrating just on English and Greek, it is tempting to relate these two differences to each other. However, the existence of inflected infinitives in Portuguese (Raposo, 1987) and Hungarian (Tóth, 2000) suggests that this would be misguided: these languages show us that it is possible for infinitival forms to bear subject
agreement under certain conditions. (And interestingly, the two languages differ strikingly in the conditions under which inflected infinitival forms are found: see Landau 2004 for a discussion of these differences and their relevance for the crosslinguistic distribution of control.) Consequently, I will not attempt to draw a theoretical connection between the distribution of (morphological) tense and the distribution of agreement.

6.4 Diagnostics for monoclausality

The purpose of this section is to investigate the extent to which we can use emphatic polarity item licensing (section 6.4.1) and inverse scope (section 6.4.2) as independent diagnostics for monoclausality. We will see that for the most part, both of these phenomena give rise to splits that track the proposed monoclausal/biclausal distinction in the expected way; however, other factors may be operative as well. The discussion here will be confined to anaphoric tense and independent tense predicates; see section 6.7 below for the application of these diagnostics to the class of dependent tense predicates.

6.4.1 Polarity licensing

Greek has two sets of negative indefinites, illustrated in (33), where uppercase letters indicate emphatic stress.

\[(33) \quad \begin{align*}
\text{a. } & \text{kanenas/KANENAS‘any(one)/no(one)’} \\
\text{b. } & \text{tipota/TIPOTA ‘anything/nothing’} \\
\text{c. } & \text{pote/POTE‘ever/never’} \\
\text{d. } & \text{puthena/PUTHENA ‘anywhere/nowhere’ (adapted from Giannakidou & Quer 1997:98)}
\end{align*}\]

These two sets differ both in terms of what counts as an appropriate licensor and what structural relationship the licensor has to be in: see Giannakidou & Quer 1997; Giannakidou 1998, 1999, 2000. Importantly for my purposes, Giannakidou & Quer (1997) observe that while both sets are
licensed by sentential negation, the emphatic set generally requires the negation to be clause-local while the non-emphatic set does not:

(34) a. O Yanis den elise {kanena/KANENA} provlima.
the Yanis not solve.pp.3SG any/ANY problem
‘Yanis didn’t solve any problem.’

d. O Yanis den ipe oti elise {kanena/*KANENA} provlima.
the Yanis not say.pp.3SG that solve.pp.3SG any/ANY problem
‘Yanis didn’t say that he solved any problem.’

But Giannakidou and Quer also show that long-distance licensing of emphatic kanena appears to happen under some conditions. And as we see in the split between (35) and (36), the availability of long-distance licensing tracks the monoclausal/biclausal split in the expected way: with predicates in the anaphoric tense class, emphatic KANENA can be licensed by negation on the higher predicate, whereas with predicates in the independent tense class, this is not possible. These data warrant the hypothesis that apparent cases of long-distance licensing are actually just another case of clause-local licensing, and so we can maintain the strong generalization that emphatic KANENA must always be licensed clause-locally. (Giannakidou & Quer (1997) reach roughly the same conclusion, although implemented in a different fashion: noting the connection between long-distance KANENA licensing and embedded tense, they suggest that the relevant notion of clause-boundedness has to do with (semantic) “tense domain”.)

(35) anaphoric tense/monoclausal

a. O Yanis den kseri na lini KANENA provlima.
the Yanis not know.inp.3SG NA solve.inp.3SG any problem
‘Yanis doesn’t know how to solve any problem.’

b. O Yanis den arxise na lini KANENA provlima
the Yanis not begin.pp.3SG NA solve.inp.3SG any problem
‘Yanis didn’t dare to solve any problem.’

c. O Yanis den tolmise na lisi KANENA provlima.
the Yanis not dare.pp.3SG NA solve.inp.3SG any problem
‘Yanis didn’t dare to solve any problem.’

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(36) **INDEPENDENT TENSE/biclausal**

a. *O Yanis den anarotyete an elise KANENA provlima.
   the Yanis not wonder.inp.3sg whether solve.pp.3sg any problem
   ‘Yanis didn’t wonder whether he solved any problem.’

b. *O Yanis den lipate pu elise KANENA provlima.
   the Yanis not regret.inp.3sg that solve.pp.3sg any problem
   ‘Yanis didn’t regret that he solved any problem.’

c. *O Yanis den xerete pu elise KANENA provlima.
   the Yanis not be.glad.inp.3sg that solve.pp.3sg any problem
   ‘Yanis isn’t glad that he solved any problem.’

d. *O Yanis den lipate pu elise KANENA provlima.
   the Yanis not regret.inp.3sg that solve.pp.3sg any problem
   ‘Yanis didn’t regret that he solved any problem.’

e. *O Yanis den pistevi oti elise KANENA provlima.
   the Yanis not believe.inp.3sg that solve.pp.3sg any problem
   ‘Yanis doesn’t believe that he solved any problem.’

However, additional data indicate that other factors are at play as well. The predicate *elpizo* ‘hope’ belongs in the **INDEPENDENT TENSE** class since it can embed a past tense verb. This predicate is also special in being able to embed both *na*-complements and *oti*-complements. (37)–(38) show that licensing of emphatic KANENA under *elpizo* is sensitive to two factors: first, regardless of whether the embedded subject is overt or not, it is possible with *na*-complements (37) but not with *oti*-complements (38). Second, focusing on *na*-complements, embedded tense plays a role: long-distance KANENA licensing is degraded with embedded past tense, as we see in (37b).

(37) a. O Yanis den elpizi na lisi KANENA provlima (o Kostas).
   the Yanis not hope.inp.3sg that solve.pnp/pp.3sg any problem the Kostas
   ‘Yanis doesn’t hope (for Kostas) to solve any problem.’

b. ?O Yanis den elpizi na elise KANENA provlima (o Kostas).
   the Yanis not hope.inp.3sg that solve.pp.3sg any problem the Kostas
   ‘Yanis doesn’t hope (for Kostas) to have solved any problem.’

(38) a. *O Yanis den elpizi oti tha lini KANENA provlima (o Kostas).
   the Yanis not hope.inp.3sg that will solve.inp.3sg any problem the Kostas

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‘Yanis doesn’t hope that Kostas/he will solve any problem.’

b. *O Yanis den elpizi oti elise KANENA provlima (o Kostas). the Yanis not hope.INP.3SG that solve.PP.3SG any problem the kostas ‘Yanis doesn’t hope that Kostas/he solved any problem.’

There are at least two ways of interpreting these data. Focusing on the contrast between (37) and (38), one possibility is that emphatic KANENA licensing is not sensitive to the monoclausal/biclausal distinction but rather sensitive to distinctions in mood, (subjunctive) na-complements being transparent to a higher negation but (indicative) oti- and pu-complements being opaque. In this case, emphatic KANENA licensing would unfortunately not tell us anything about clausality. Focusing on the contrast between (37a)–(37b), however, another possibility is that in the appropriate syntactic frame (namely one in which the embedded tense is morphologically nonpast), elpizo ‘hope’ may be able to instantiate a monoclausal structure. Such a possibility is plausible given the semantic similarity between ‘hope’ and ‘want’, which may also instantiate monoclausal structures, and if this possibility is correct, then we can maintain the strong generalization that emphatic KANENA licensing is clause-bound.

Preliminary support for the latter conclusion come from the data in (39).

(39) a. Den pistepsa oti ipes tipota/*TIPOTA.
    not believe.PP.1SG that say.PP.2SG anything
    ‘I didn’t think that you said anything.’

b. Den pistevi oti ipa tipota/*TIPOTA.
    not believe.INP.2SG that say.PP.1SG anything
    ‘You don’t think that I said anything.’

c. Den pistovo oti ipa tipota/TIPOTA.
    not believe.INP.1SG that say.PP.2SG anything
    ‘I don’t think that you said anything.’ (Giannakidou & Quer 1997)

The data in (39) are significant for two reasons. First, (39c) exhibits the indicative complementizer oti yet still allows long-distance licensing of TIPOTA (which patterns like KANENA in the relevant respects), thus dissociating the connection between long-distance licensing and mood or comple-
mentizer particle choice. Second, what we see is that long-distance emphatic polarity licensing with *pistevo* ‘believe’ is possible just in case the matrix predicate is first-person singular and non-
past. Speaker and speech time anchoring are precisely what we expect to find with an inflectional head above Tense like Mod_{epistemic}. (See chapter 2.) I therefore suggest that in Greek, tense and agreement morphology on the verb interact with the Restructuring Rule from chapter 2 to allow *pistevo* ‘believe’ to realize Mod_{epistemic} just in case the morphology on *pistevo* supports a speaker (i.e., 1sg) and speech time (i.e., unembedded nonpast) orientation. If this is correct, then it makes sense of the contrast between (39a–b) and (39c) in a way that allows us to maintain the strong view that emphatic polarity licensing is strictly clause-bound: (39a–b) are biclausal, whereas (39c), due to the special speaker/speech time orientation capacity of the combination of 1sg and nonpast, instantiates a monoclausal structure in which *pistevo* realizes Mod_{epistemic}. (See also Giannakidou & Quer 1997 for a connection between these facts and the phenomenon of neg-raising.) I leave it to future work to establish the feasibility of this approach; in what follows, I show that data from inverse scope point toward a similar conclusion.

### 6.4.2 Inverse scope

Generally speaking, a universal quantifier can take inverse scope within its local clause (40a) but not over a clause boundary (40b). (See Farkas & Giannakidou 1996 and references therein.)

\[(40)\]

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{kapios fititis elise kathē provlima.}</td>
<td>\textit{kapios fititis ipe oti elise kathē provlima.}</td>
</tr>
<tr>
<td>some _student solve_pp.3sg every problem</td>
<td>some _student say_pp.3sg that solve_pp.3sg every problem</td>
</tr>
<tr>
<td>‘Some student solved every problem.’</td>
<td>‘Some student said that he solved every problem.’</td>
</tr>
</tbody>
</table>

\[\exists > \forall/\forall > \exists \]

But analogously to what we saw above regarding emphatic *KANENA* licensing, Farkas & Giannakidou (1996) show that under some conditions, this clause-locality is apparently suspended in Greek. And as we see from the split in (41)–(42), this suspension tracks the monoclausal/biclausal split
in the expected way: an embedded universal quantifier can take inverse scope over an ANAPHORIC TENSE predicate (41) but not over an INDEPENDENT TENSE predicate, suggesting that we can maintain the strong generalization that inverse scope is always clause-bound.

(41) ANAPHORIC TENSE/monoclausal

a. Kapios fititis kseri na lini kathe provlima.  
   some student know.INP.3SG NA solve.INP.3SG every problem  
   ‘Some student knows how to solve every problem.’  
   \[∃ > ∀/∀ > ∃\]

b. Kapios fititis arxise na lini kathe provlima.  
   some student start.PP.3SG NA solve.INP.3SG every problem  
   ‘Some student started to solve every problem.’  
   \[∃ > ∀/∀ > ∃\]

c. Kapios fititis tolmise na lisi kathe provlima.  
   some student dare.PP.3SG NA solve.PNP.3SG every problem  
   ‘Some student started to solve every problem.’  
   \[∃ > ∀/∀ > ∃\]

(42) INDEPENDENT TENSE/biclausal

   some student believe.INP.3SG that solve.PP.3SG every problem  
   ‘Some student believes that he solved every problem.’  
   \[∃ > ∀/∗∀ > ∃\]

b. Kapios fititis isxirizete oti elise kathe provlima. 
   some student claim.PP.3SG that solve.PP.3SG every problem  
   ‘Some student claimed that he solved every problem.’  
   \[∃ > ∀/∗∀ > ∃\]

c. Kapios fititis anarotiete an elise kathe provlima. 
   some student wonder.INP.3SG whether solve.PP.3SG every problem  
   ‘Some student wonders whether he solved every problem.’  
   \[∃ > ∀/∗∀ > ∃\]

d. Kapios fititis lipate pu elise kathe provlima. 
   some student regret.INP.3SG that solve.PP.3SG every problem  
   ‘Some student regrets that he solved every problem.’  
   \[∃ > ∀/∗∀ > ∃\]

e. Kapios fititis xerete pu elise kathe provlima. 
   some student be.glad.INP.3SG that solve.PP.3SG every problem  
   ‘Some student is glad that he solved every problem.’  
   \[∃ > ∀/∗∀ > ∃\]

As with emphatic KANENA licensing, however, elpizo ‘hope’ shows us that there may be other factors at play as well. When elpizo ‘hope’ embeds a na-complement, inverse scope is possible.
when the embedded tense is nonpast and the embedded subject is covert (43a); an overt embedded subject and embedded past tense diminish the capacity for inverse scope (43b–d) for at least some speakers. When *elpizo* embeds an *oti*-complement, inverse scope is categorically unavailable.

\[(43)\]

\[\begin{align*}
a. & \ Kapios \ fititis \ elpizi \ na \ lisi \ kathe \ provlima. \\
\text{some \ student \ hope.}\text{\,}\text{INF.}\text{\,}\text{3SG \ NA \ solve.}\text{\,}\text{PDisplays.}\text{\,}\text{3SG} \ \text{every \ problem} \\
\text{‘Some student hopes to solve every problem.’} & \exists > \forall / \forall > \exists
\end{align*}\]

\[\begin{align*}
b. & \ Kapios \ fititis \ elpizi \ na \ elise \ kathe \ provlima. \\
\text{some \ student \ hope.}\text{\,}\text{INF.}\text{\,}\text{3SG \ NA \ solve.}\text{\,}\text{PDisplays.}\text{\,}\text{3SG} \ \text{every \ problem} \ \text{the \ Kostas} \\
\text{‘Some student hopes for Kostas to solve every problem.’} & \exists > \forall / \% \forall > \exists
\end{align*}\]

\[\begin{align*}
c. & \ Kapios \ fititis \ elpizi \ na \ lisi \ kathe \ provlima \ o \ \text{Kostas.} \\
\text{some \ student \ hope.}\text{\,}\text{INF.}\text{\,}\text{3SG \ NA \ solve.}\text{\,}\text{PDisplays.}\text{\,}\text{3SG} \ \text{every \ problem} \ \text{the \ Kostas} \\
\text{‘Some student hopes for Kostas to solve every problem.’} & \exists > \forall / \% \forall > \exists
\end{align*}\]

\[\begin{align*}
d. & \ Kapios \ fititis \ elpizi \ na \ elise \ kathe \ provlima \ o \ \text{Kostas.} \\
\text{some \ student \ hope.}\text{\,}\text{INF.}\text{\,}\text{3SG \ NA \ solve.}\text{\,}\text{PDisplays.}\text{\,}\text{3SG} \ \text{every \ problem} \ \text{the \ Kostas} \\
\text{‘Some student hopes to have solved every problem.’} & \exists > \forall / \% \forall > \exists
\end{align*}\]

\[(44)\]

\[\begin{align*}
a. & \ Kapios \ fititis \ elpizi \ oti \ tha \ lini \ kathe \ provlima \ (o \ \text{Kostas}). \\
\text{some \ student \ hope.}\text{\,}\text{INF.}\text{\,}\text{3SG \ that \ will \ solve.}\text{\,}\text{INF.}\text{\,}\text{3SG} \ \text{every \ problem} \ \text{the \ Kostas} \\
\text{‘Some student hopes that Kostas/he will solve every problem.’} & \exists > \forall / \% \forall > \exists
\end{align*}\]

\[\begin{align*}
b. & \ Kapios \ fititis \ elpizi \ oti \ elise \ kathe \ provlima \ (o \ \text{Kostas}). \\
\text{some \ student \ hope \ that \ solve.}\text{\,}\text{PDisplays.}\text{\,}\text{3SG} \ \text{every \ problem} \ \text{the \ Kostas} \\
\text{‘Some student hopes that Kostas/he solved every problem.’} & \exists > \forall / \% \forall > \exists
\end{align*}\]

As discussed above in connection with emphatic *KANENA* licensing, one possible interpretation of these facts is that *elpizo* ‘hope’ may instantiate a monoclausal structure under some conditions. The degraded status of inverse scope for some speakers in sentences like (43c), however, shows that for at least some speakers, inverse scope exhibits restrictions not operative on emphatic *KANENA* licensing. See also section 6.7 below for more on emphatic *KANENA* licensing and inverse scope with the class of dependent tense predicates.
6.5 Responding to potential objections

6.5.1 Case matters

One question that needs to be addressed is what the analysis predicts about the case of the controllee. As originally pointed out by Philippaki-Warburton & Catsimali (1999) (see also Landau 2004; Spyropoulos 2008), there is evidence that in Greek subject control, the controllee bears nominative case just like an overt subject would; this is apparent from case agreement on predicate modifiers like *monos ‘alone’:

(45) O Yanis stamatise na pigeni monos/*mono sinema.
    the.NOM Yanis.NOM stop.pp.3SG NA go.pnp.3SG alone.nom/alone.acc cinema
    ‘John has stopped going to the movies alone.’ (Spyropoulos 2008:171)

This fact is consistent with and in fact predicted by a (monoclausal) raising approach to the structure in question: predicate modifiers bear the same case they would in a garden-variety monoclausal sentence. As far as other approaches to Greek control go, facts like this are also unproblematic for the *pro approach (see Philippaki-Warburton 1987; Philippaki-Warburton & Catsimali 1999; Spyropoulos 2008, reviewed in section 6.6.1 below), insofar as *pro bears case like a regular DP, as well as for Landau’s (2004) approach in which PRO bears case like a regular DP. Facts like this are problematic, however, for any approach that links the distribution of control to case: see for example Kapetangianni & Seely (2008), reviewed in section 6.6.4 below, who link control to phi-defective Agr on the embedded verb and therefore are forced to stipulate that phi-defective Agr cannot check nominative case on a DP but can check nominative case on a modifier.

Somewhat trickier is object control, where we see that predicate modifiers bear nominative case although the case of the object controller is accusative:

(46) I Maria epise to Yani na figi
    the.NOM Maria.NOM persuade.pp.3SG the.acc Yanis.acc NA leave.pnp.3SG
telefteos/*telefteo.
    last.nom/last.acc
Facts like these leave us with two options. First, it could be that object control does not have the same analysis as subject control in Greek; in this dissertation, I have largely been setting object control aside, and it could be that what I say about subject control does not extend to object control. Second, if we want to adopt a movement analysis for Greek object control, then we could follow Ura (1996); Bejar & Massam (1999); Merchant (2006) in countenancing multiply case marked A-chains (as Potsdam 2009 does for Malagasy backward object control and Alexiadou et al. 2010 do for Greek object control in particular), whereby the same argument triggers nominative case at an earlier stage in the derivation which is reflected on the predicate modifier, but then receives accusative case at a later stage. Merchant (2006) in fact argues on the basis of data from several languages that argument DPs must be able to receive more than one case. See also Joseph 1990; Merchant 2006, 2009 for the application of this idea to other Greek constructions, where on one possible analysis, an argument moves out of the (nominative case) subject position of a finite clause into an (accusative case) prepositional object position.

6.5.2 Backward and copy control

Philippaki-Warburton & Catsimali (1999) (see also Spyropoulos 2008) observe that under some conditions, the controllee in a Greek controlled complement may be overt. In an updated treatment, Alexiadou et al. (2010) take similar facts as indication that Greek allows for backward control (Polinsky & Potsdam, 2002, 2006; Potsdam, 2009): a construction in which it is the controllee rather than the controller that is pronounced. They present data similar to (47), where the subject may appear in four different positions in the construction, and argue that when the subject appears between the embedded verb and its object, it is itself truly embedded, and occurs in tandem with an unpronounced matrix subject.

(47) (O Yanis) tolmise (o Yanis) na peksi (o Yanis) kithara (o Yanis).
     the Yanis  dare.PP.3SG the Yanis  NA play.PNP.3SG the Yanis  guitar  the Yanis
‘Yanis dared to play guitar.’

According to Alexiadou et al. (2010), backward control is possible with all ‘obligatory control’ predicates in Greek, and all ‘obligatory control’ predicates in Greek disallow Partial Control. If these two generalizations are correct, then it is in harmony with my analysis: Greek Exhaustive Control has a (monoclausal) raising analysis, and so under some conditions the relevant argument may remain in its base position, whereas Greek Partial Control has a (biclausal) pro analysis, and so the expectation is that ‘backward control’ should be impossible: this would require an illicit reverse binding relation between the overt argument and pro. In other words, I follow proponents of the movement theory of control in taking backward control as evidence for movement and against PRO(/pro). Sentences like (48) indicate that this expectation is indeed borne out: with a predicate like xerome ‘be glad/happy’, the overt subject may appear in the same four positions as in the control example in (47); crucially, however, if it is in either of the lower two positions, then it forces a disjoint interpretation between the matrix subject and the embedded subject. This is because pro can only be bound contextually or by a structurally higher antecedent.

(48) (O Yanis<sup>a</sup>) xerete (o Yanis<sup>a</sup>) pu epekse (o Yanis<sup>b</sup>) kithara (o Yanis<sup>b</sup>).
the Yanis be.glad.INP.3SG the Yanis that play.PP.3SG the Yanis guitar the Yanis

a: ‘Yanis<sub>1</sub> is glad that he<sub>1/2</sub> played the guitar.’ (pro<sub>1/2</sub> ... Yanis<sub>2</sub>)

b: ‘He<sub>1</sub> is glad that Yanis<sub>1/2</sub> played the guitar.’ (Yanis<sub>2</sub> ... pro<sub>1/2</sub>)

As reviewed in section 6.2.3 above, Spyropoulos (2008) also shows that under some conditions, both the controller and the controllee can be overt:

(49) o Yanis<sub>i</sub> kseri na xorevi ki aftos<sub>i/sj</sub> kalo tsamiko.
the.NOM Yanis.NOM know.INP.3SG NA dance.INP.3SG and he good.ACC tsakimo.ACC

‘Yanis knows how to dance tsamiko well.’ (Spyropoulos 2008:167)

Since ksero ‘know (how)’ is in the anaphoric tense class of predicates, the hypothesis is that (49) is an instance of copy control (Chung, 1978; Lee, 2003; Polinsky & Potsdam, 2006; Haddad, 2007;
Boeckx et al., 2007, 2008), as I also proposed in chapter 5 for a similar phenomenon in Mandarin. If such an analysis is on the right track, then it is consistent with the (monoclausal) raising approach to Exhaustive Control, and reflects a kind of multiple spell-out. (For a useful survey of the general phenomena of multiple spell-out and lower-copy spell-out, and their relationship to the copy theory of movement, see Corver & Nunes 2007.)

6.5.3 Alexiadou et al. 2010 arguments against restructuring

In response to Roussou’s (2009) clause union approach to Greek complement control, Alexiadou et al. (2010) articulate two arguments against the view that Greek complement control structures are monoclausal. Here, I discuss and respond to each argument in turn.

The first argument is based on the observation that Greek complement control structures have two positions for negation, one targeting the matrix predicate (50a) and one targeting the embedded predicate (50b). As (50c) shows, these negations can co-occur.

\[(50)\]

a. **Den** emathe na magirevi o Yanis.
   not learn.pp.3sg na cook.inp.3sg the Yanis
   ‘Yanis didn’t learn to cook.’

b. Emathe na **min** magirevi o Yanis.
   learn.pp.3sg na not cook.inp.3sg the Yanis
   ‘Yanis learned not to cook.’ (i.e., ‘Yanis got into the habit of not cooking.’)

c. **Den** emathe na **min** magirevi o Yanis.
   not learn.pp.3sg na not cook.inp.3sg the Yanis
   ‘Yanis didn’t learn not to cook.’ (i.e., ‘Yanis still has the habit of cooking.’) (Alexiadou et al. 2010:97)

For this to be an argument against monoclausality, we would have to assume that every instance of the negators *den* and *min* signals a separate clause. And while some researchers have claimed that restructuring precludes embedded negation (see Wurmbrand 2001; Lee-Schoenfeld 2007 for German and Kayne 1989; Cardinaletti & Shlonsky 2004 for Italian), this kind of claim has also been disputed. Reis & Sternefeld (2004), for example, show that in the right kind of context, negation in
a German long passive can be interpreted either ‘high’ or ‘low’, as in (51). Cinque (2006) shows that under certain conditions, clitic climbing may co-occur with embedded negation in Italian, and sometimes, as in (52), two simultaneous negations are possible.

(51) Der Teppich wurde — leider vergleichlich — nicht zu beschädigen versucht. 
the rug was unfortunately in.vain — not to damage tried 
‘They didn’t try to damage the rug.’

OR: They tried not to damage the rug.’ (Reis & Sternefeld 2004:478)

(52) Non ci si può non pensare. 
not there one can not think 
‘One cannot not think about.’ (Cinque 2006:43)

The fact that embedded negation can occur in the presence of long passivization in German and clitic climbing in Italian suggests that multiple and embedded negation cannot be used definitively to establish biclausality.4)

Alexiadou et al.’s second argument is based on the observation that in a complement control context (just like in an uncontroversially biclausal context) an event modifier like tesseris fores

4. Cardinaletti & Shlonsky (2004) take the more nuanced position that restructuring infinitives disallow sentential negation but allow constituent negation; this is based on data like (i) showing that clitic climbing is compatible with embedded negation (ia), but not if there is a negative indefinite that needs to be licensed, as in (ib). These facts make sense on the view that sentential but not constituent negation licenses negative indefinites. Greek den and min are both standardly analyzed as involving sentential negation (see e.g. Giannakidou 1998), but if min may under some conditions realize constituent negation, this could be a way of understanding the relevant data that is consistent both with the view that Greek complement control is monoclausal and with the view that sentential negation may project only once per clause.

(i) a. Ci vorrei poter non andare. 
there I.would.want be.able not go 
‘I would like to be able to not go there.’

b. *Ci vorrei poter non andare con nessuno. 
there I.would.want be.able not go with nobody 
Intended: ‘I would like to be able to not go there with anybody.’ (Cardinaletti & Shlonsky 2004:528)
‘four times’ can target either the matrix predicate or the embedded predicate, depending on its positioning in the sentence:

(53) Fetos emathe {tesseris fores}1 na pirovoli {tesseris fores}2 o Yanis. this.year learned.pp.3SG four times NA shoot.inp.3SG four times the Yanis

1 = ‘This year there were four times that John learned how to shoot.’

2 = ‘This year John learned how to shoot four times (in a row).’ (Alexiadou et al. 2010:97)

Here the authors rely tacitly on the assumption that there can be only one event description per clause (or more neutrally, there can be only one of whatever kind of meaning is targeted by a modifier like tesseris fores ‘four times’). But as with the previous argument involving negation, this assumption is disputable. Wurmbrand (2001), in particular, shows that German long passives are compatible with two separate event modifiers, as in (54). Wurmbrand concludes that there can be more than one event description per clause (contra approaches to restructuring that tie the phenomenon to a single event structure: Napoli 1981; Rochette 1988, 1990; Rosen 1989, 1991).

(54) Schon zwei Mal wurde der Schach[-]welt[-]meister drei Mal hintereinander zu besiegen versucht.

‘Somebody tried already twice to beat the chess world champion three times in a row.’

(Wurmbrand 2001:153)

Wurmbrand’s conclusion finds independent support in uncontrovertially monoclausal contexts that support more than one kind of event modification. For example, progressive aspect builds a complex event description that can be targeted by a modifier: a sentence like (55) is ambiguous depending on the relative semantic scope of the event modifier four times and the progressive operator. In the right kind of context, it is even possible to use two event modifiers, one targeting the lower bare event description and one targeting the higher complex event description, as in (56).

(55) John was opening the door four times.
Another clear case where multiple event modifications are possible in a monoclausal context is the so-called repetitive/restitutive ambiguity of *again*. See e.g. Beck 2005 and references therein.

I conclude from these considerations that Alexiadou *et al.*’s arguments against the monoclausal approach to Greek complement control are not valid.

6.5.4 Absence of clitic climbing

One might object to the monoclausal/restructuring approach to Greek complement control on the grounds that Greek disallows clitic climbing even with the kinds of predicates that give rise to it in Italian and Spanish, such as ‘be able’ (Terzi, 1992; Iatridou, 1993):

(57)   a. {∗to} boro na {to} grapso.
       it can.inp.1sg na it write.pnp.1sg
       ‘I can write it.’ (Iatridou 1993:189) GREEK

       b. {Lo} puedo escribir[-]{lo}.
           it can.1sg write-it
           ‘I can write it.’ SPANISH

It is tempting to relate the clitic climbing asymmetry in (57) to the independent difference between Greek and Spanish that the latter has infinitives but the former does not. However, two kinds of considerations undermine such a relation and instead point toward the view that monoclusality is a necessary but not a sufficient condition for clitic climbing and also that the availability of clitic climbing is not reducible to whether a language has infinitives.
First, it is well known that French, despite being like Italian and Spanish in having both object clitics and infinitives, disallows clitic climbing (except with the aspectual auxiliaries *avoir* ‘have’ and *être* ‘be’ and with causative verbs). (See e.g. Kayne 1989; Roberts 1997.)

(58) \[ \text{Je} \{*\text{le}\} \text{peux} \{\text{le}\} \text{voir.} \]

\[ \text{I} \text{it} \text{can} \text{it} \text{see} \]

‘I can see it.’

To the extent that French examples like (58) display other properties that I take as evidence for monoclausality (e.g., exhaustive control, ban on overt embedded subjects, “long-distance” licensing of negative indefinites, inverse scope), French shows us that a ban on clitic climbing does not necessarily indicate biclausality. (Though see Hacquard 2008 for an alternative view.)

Second, as pointed out by Terzi (1992), clitic climbing out of apparently finite complements is attested in some Salentino dialects of Italian (Calabrese, 1993). In Salentino, clitic climbing out of apparently finite complements is possible just in case the mood particle *ku* is missing (59). This fact leads Terzi (1992) to argue that in Greek, what blocks clitic climbing is the obligatory presence of the mood particle *na*. However, we also find clitic climbing out of apparently finite complements in Serbo-Croatian (Progovac, 1993a, 1996; Terzi, 1996; Stjepanović, 1998, 2004; Bošković, 2000), and here, clitic climbing is (marginally) possible despite the obligatory presence of the mood particle *da*, as in (60a) (cf. the robust ungrammaticality of clitic climbing with a crosslinguistically stable non-restructuring predicate like ‘say’, in (60b)).

(59) a. \( \{\text{Lu}\} \text{voggyu} \{\text{lu}\} \text{kkatu} \).

\[ \text{it} \text{want.1sg} \text{it} \text{buy.1sg} \]

‘I want to buy it.’

b. \( \{*\text{Lu}\} \text{voggyu} \text{ku} \{\text{lu}\} \text{kkatu} \).

\[ \text{it} \text{want.1sg prt} \text{it} \text{buy.1sg} \]

‘I want to buy it.’ (Terzi 1992:159)

(60) a. Milan \{?\text{ga}\} \text{želi} \text{da} \{\text{ga}\} \text{vidi}.

<table>
<thead>
<tr>
<th>Milan</th>
<th>him want.3sg prt</th>
<th>him</th>
<th>see.3sg</th>
</tr>
</thead>
</table>

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Table 6.2 summarizes all the facts. I conclude that the availability of clitic climbing is independent of whether a language has infinitives and that the unavailability of clitic climbing does not unambiguously indicate biclausal.

<table>
<thead>
<tr>
<th>[+ clitic climbing]</th>
<th>[− clitic climbing]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+ infinitives]</td>
<td>Italian, Spanish</td>
</tr>
<tr>
<td></td>
<td>French</td>
</tr>
<tr>
<td>[− infinitives]</td>
<td>Salentino, Serbo-Croatian</td>
</tr>
<tr>
<td></td>
<td>Greek</td>
</tr>
</tbody>
</table>

Table 6.2: Typological relationship between clitic climbing and infinitives

6.6 Comparison to previous approaches


6.6.1 pro

Philippaki-Warburton (1987) argues that Greek lacks the category PRO and that instead, apparent cases of complement control involve an embedded pro subject. The conceptual motivation for this position is that, following Chomsky (1981), PRO must occur in an ungoverned environment, which (in English) coincides with the subject position of a nonfinite clause. But in Greek, all clauses are finite, and so the prediction is that PRO can never occur. According to Philippaki-Warburton, two observations support this prediction. First, although in certain complementation contexts like
(61a), the covert embedded subject of a na-clause is obligatorily identified with a matrix argument, in contexts like (61b), the covert subject of a na-clause must refer to an entity known from context (just like pro) rather than receiving an arbitrary interpretation (as we would expect under a PRO analysis). Second, (62) shows that under certain conditions, the covert embedded subject under prospatho ‘try’ need not be coreferential with a matrix argument, as expected under a pro analysis but not under a PRO analysis.

(61)  
  a. O Yanis prospathise [na fiji].  
      the Yanis try.pp.3sg na leave.inp.3sg  
      ‘Yanis tried to leave.’
  
  b. Dhen ine fanero ti [na kani].  
      not be.inp.3sg clear what na do.inp.3sg  
      ‘It is not clear what he should do.’ (Philippaki-Warburton 1987:291–292)  
      NOT: ‘It is not clear what to do.’

(62)  
  Prospathisa me oli mu ti dinami na erthis.  
  try.pp.1sg with all my the strength na come.inp.2sg  
  ‘I tried with all my power for you to come.’ (Philippaki-Warburton 1987:292)

In an updated treatment, Philippaki-Warburton & Catsimali (1999) provide two additional pieces of support for the pro approach to Greek complement control. First, assuming that PRO must not bear Case (or must bear null Case), the PRO approach is challenged by data like (63), where we can infer that the case of the covert embedded subject is nominative, based on the fact that we find nominative case on clause-local predicative adjectives (63a), modifiers (63b), intensifiers (63c) and overt emphatic pronouns (63d).

(63)  
  a. O Yanis kseri na ine panda evjenikos.  
      the.nom Yanis.nom know.inp.3sg na be.inp.3sg always polite.nom  
      ‘Yanis knows how to be always polite.’
  
  b. O Yanis kseri na kolimbai monos tu.  
      the.nom Yanis.nom know.inp.3sg na swim.inp.3sg alone.nom  
      ‘Yanis knows how to swim by himself.’
c. Arxise o Yanis na kani ki o idhjos sahlamares.
    start.pp.3SG the.NOM Yanis.NOM NA do.inp.3SG foc the.NOM same.NOM stupidities
    ‘Yanis started to do stupidities himself.’

d. Anangasan tin Eleni na milisi afti i idhja.
    force.pp.3PL the.acc Eleni.acc NA speak.inp.3SG she the.NOM same.NOM
    ‘They forced Helen to speak herself.’

(Philippaki-Warburton & Catsimali 1999:160–163)

Second, the authors point to (64) as showing that the subject in a control structure can appear in a
variety of places, including in the embedded clause, which challenges the view that control depends
on a particular structural relationship between the controller and PRO.

(64) {O Yanis} kseri tora {o Yanis} na kolimbai {o Yanis} ke xoris
    the Yanis know.inp.3SG now NA swim.inp.3SG even without
    sosivio {o Yanis}.
    life.jacket
    ‘Yanis knows now to swim even without a life jacket.’

(Philippaki-Warburton & Catsimali 1999:164)

Spyropoulos (2008) further pushes the line that control in Greek is achieved without PRO,
following Philippaki-Warburton & Catsimali (1999) in taking Case data like (63) as crucial and
also presenting data similar to (64) showing that control is possible even in the presence of an overt
embedded subject. In particular, control is possible with an emphatic embedded subject, as in (65a).
And when the matrix controller is covert, the embedded subject may be a regular pronoun (65b) or
a full NP (65c).

(65) a. o Yanis\(_i\) kseri na xorevi ki aftos\(_i/\ast j\) kalo tsamiko.
    the.NOM Yanis.NOM know.inp.3SG NA dance.inp.3SG and he good tsakimo
    ‘Yanis knows how to dance tsamiko well.’

b. Δ\(_i\) kseri na xorevi aftos\(_i/\ast j\) kalo tsamiko?
    know.inp.3SG NA dance.inp.3SG he good tsamiko
    ‘Does he know how to dance tsamiko well?’
c. \( \Delta_i \) kseri na xorevi o Yanis\(_{i/sj}\) kalo tsamiko?

\( \text{know.inp.3sg} \text{ na dance.inp.3sg the.nom Yanis.nom} \) good tsamiko

‘Does Yanis know how to dance tsamiko well?’ (Spyropoulos 2008:167)

The central problem for any pro approach to Greek complement control, however, is to explain why pro is obligatorily anaphoric to a matrix argument just in case the embedded verb has certain temporal properties. To explain the relationship between the properties of embedded tense and the properties of the embedded subject, Spyropoulos proposes that in the case of anaphoric tense, where both the embedded tense and the embedded subject are anaphoric to matrix counterparts, the matrix T and the embedded T must match in features, and this matching forces the matrix and embedded Agrs to match as well. When this happens, obligatory coreference obtains. As for the restrictions on the embedded subject in dependent tense contexts, Spyropoulos claims that “it is the result of certain semantic postulates or pragmatic requirements imposed on the embedded subject by the matrix predicate when this is a control predicate” (Spyropoulos 2008:178).

Taking Spyropoulos’s analysis as the “state-of-the-art” for the pro approach to Greek control, I have three criticisms for Spyropoulos’s analysis and by extension for the pro approaches in general. First, as far as I am aware, there is no independent reason to believe that matching of matrix and embedded T features should entail matching of matrix and embedded Agr features: this proposal is a restatement of the problem, albeit cast in the language of feature agreement. Second, Spyropoulos’s appeal to “semantic postulates or pragmatic requirements” in explaining the dependent tense patterning is not worked out in explicit detail, thus making it difficult to evaluate. But modulo this concern, no connection is drawn between the tense facts and the semantic or pragmatic requirements which impose restrictions on the embedded subject. Why do semantic postulates or pragmatic requirements impose restrictions on the interpretation of the embedded subject in precisely the same environments where restrictions are placed on the embedded tense? Finally, the analysis is redundant in that Spyropoulos appeals to feature matching in explaining the anaphoric tense patterning, yet presumably the semantic or pragmatic requirements invoked for the dependent tense facts could be appealed to here as well.
Iatridou (1993, but based on a manuscript that was written and circulated in 1988) presents one of the earliest arguments for the existence of PRO in Greek (*contra* Philippaki-Warburton 1987, discussed above, who argues that Greek has *pro* but not PRO) as well as one of the first insights into the connection in Greek between control and tense, which continues to play an important role in current approaches. Iatridou’s argument has two key components. First, Greek has a class of predicates whose embedded subject is always obligatorily coreferential with the matrix subject. Iatridou reasons that if *pro* were postulated as the embedded subject, the obligatory coreference to the matrix subject would be unexpected, whereas this is exactly what we would expect if the embedded subject is PRO. Second, although Greek embedded clauses are always inflected for agreement and (superficially) for tense, one can make a principled distinction between embedded clauses whose verbs obligatorily show present tense morphology and embedded clauses whose verbs are allowed to show past tense morphology. Iatridou generalizes that those predicates whose embedded subjects show obligatory coreference also disallow past tense morphology on the embedded clause. Iatridou captures this correlation by appealing to the following three proposals:

\[(66)\]

\[\begin{align*}
\text{a. Obligatory present tense in complement clause indicates } & [-\text{Tense}]. \\
\text{b. In Greek, nominative case is assigned by } & [+\text{Tense}]. \\
\text{c. PRO cannot be governed by a Case-assigner.}
\end{align*}\]

This analysis thereby links the distribution of PRO to case as in e.g. Bouchard 1984, and suggests that nominative case assignment is subject to crosslinguistic variation, being assigned in Greek by [+Tense] but possibly in languages like English by [+Agr].

The main empirical shortcoming of Iatridou’s analysis is that the diagnostic ‘{does / does not} permit embedded past tense’ — and its attendant [±T] feature that regulates the distribution of PRO — turns out to be too crude for capturing the distribution of obligatorily vs. non-obligatorily coreferential embedded subjects. For example, *thelo* ‘want’ can embedded a disjoint nominative-
case subject even though it disallows embedded past tense, and similarly — under more limited conditions — for *prospatho* ‘try’ and *kataferno* ‘manage’. These considerations in fact prefigure the more nuanced three-way distinction between *independent* and *dependent* and *anaphoric* tense, which plays a role in some of the more recent approaches to control in Greek.

In an updated treatment of the PRO approach, Terzi (1992) argues that what regulates the distribution of PRO in Greek is whether embedded V-M-C head movement takes place. When it does not take place, PRO obtains, as in (67), and when it does take place, *pro* or a lexical subject obtains, as in (68).

(67) No V-M-C movement: Control

```
CP
  C
PRO
   MP
     M
na ...V ...
```

(68) V-M-C movement: No control

```
CP
  C
na+V
pro
MP
   M
na+V ...V ...
```

In this system, understanding the distribution of control thereby reduces to understanding constraints on the availability of V-M-C movement.

In this connection, Varlokosta & Hornstein 1993 (see also Varlokosta 1993, 1994) similarly argue that what regulates the distribution of *pro* and PRO in Greek complement clauses is whether V-to-C movement takes place: when it does take place, the embedded subject gets nominative Case, thereby requiring *pro* or a lexical subject, and when it does not take place, the embedded subject does not receive Case, thereby requiring PRO. Varlokosta and Hornstein link V-to-C movement to temporal and aspectual properties: they argue that it is required for tense sequencing, which happens just in case the matrix and embedded clauses denote two aspectually distinct events. The upshot of the proposal, then, is that control obtains when the matrix and embedded clauses together constitute just one event.

In summary, PRO approaches to Greek control contain important insights that relate control properties to temporal/aspectual properties. But all share the fundamental idea that this relationship
is mediated by PRO: PRO’s distributional properties are responsible for its appearance in clauses with certain temporal/aspectual properties, and PRO’s interpretational properties give rise to control. My contention is that the account developed in this chapter is able to capture the same facts in a more natural way by appealing to the monoclausality/biclausality distinction as directly linking embedded subject properties to embedded tense properties. PRO as an intermediary is unnecessary.

6.6.3 Case-marked PRO

Departing from the earlier view that PRO obtains in ungoverned (Chomsky, 1981), non-case-marked (Bouchard, 1984), or null-case-marked (Chomsky & Lasnik, 1993; Martin, 1996, 2001) environments, Landau (2004) argues that PRO is case-marked like a normal DP and that instead, its distribution is determined by [T] and [Agr] features on I₀ and C₀. Since data from Balkan languages (including Greek) figure prominently in Landau’s analysis, I include a brief discussion of his system here.

There are four crucial ingredients in Landau’s system. First, Landau proposes the following featural correlates for anaphoric, dependent, and independent tense in complement clauses (for definitions of these three kinds of tense, see section 6.2 above):

(69) Specifying [T] on embedded I₀/C₀

a. Anaphoric tense ⇒ [−T] on I₀/C₀
b. Dependent tense ⇒ [+T] on I₀/C₀

Second, Landau proposes the following featural correlates for agreement morphology in complement clauses:

(70) Specifying [Agr] on embedded I₀/C₀

a. On I₀:
i) overt agreement ⇒ [+Agr]
ii) abstract agreement ⇒ [−Agr]
iii) no agreement ⇒ ∅

b. On $\mathbf{C}^0$:
   i) $[+\text{Agr}]$ ⇒ $[+\text{T}]$
   ii) otherwise ⇒ ∅

Third, Landau proposes that the $[\text{T}]$ and $[\text{Agr}]$ values determine an $[\text{R}]$ value in the following way:

(71)  
\begin{align*}
\textbf{R-assignment Rule} \\
\text{For } X^0_{[\alpha T, \beta \text{Agr}]} \in \{I^0, C^0 \ldots\}: \\
\emptyset \rightarrow [+\text{R}]/X^0_{[\alpha \beta]} \text{, if } \alpha = \beta = '+' \\
\emptyset \rightarrow [−\text{R}]/ \text{elsewhere}
\end{align*}

(Landau 2004:842)

Fourth and finally, Landau proposes an Agree relation that takes place between $I^0$ and the subject that ensures that they match for their $[\text{R}]$ value. The $[\text{R}]$ value of a DP corresponds with whether it is capable of independent reference:

(72)  
\begin{align*}
a. \text{lexical DPs and } \text{pro}: [+\text{R}] \\
b. \text{PRO}: [−\text{R}]
\end{align*}

For Balkan languages in particular (including Greek), Landau draws a distinction between C-subjunctives (which for Landau bear anaphoric tense and require a PRO subject) and F-subjunctives (which for Landau bear dependent tense and allow for a pro or lexical DP subject), and claims that his system accurately derives this dichotomy because of the way the $[\text{T}]$ and $[\text{Agr}]$ features conspire to determine the distribution of PRO:

(73)  
\begin{align*}
a. \text{F-subjunctive: dependent tense } \rightarrow I[+\text{T}, +\text{Agr}] \rightarrow \text{lexical DP and } \text{pro} \text{ are possible}
\end{align*}
b. C-subjunctive: anaphoric tense → I[–T, +Agr] → PRO is obligatory

My primary worry regarding Landau’s system is conceptual: the component in Landau’s system that accounts for the correlation between control and temporal properties is the so-called R-assignment Rule shown in (71) above. While (71) may be adequate as a descriptive generalization (given the assumptions Landau makes about the distribution and valuation [T], [Agr] and [R]), it does not tell us why the correlations are the way they are and not some other way.

6.6.4 Control as movement

Kapetangianni & Seely (2008) (see also Alexiadou et al. 2010) advance a movement approach to Greek controlled complements. They argue that the crucial feature distinguishing control predicates from non-control predicates is that the former select a “phi-defective” Agr in their IP complement whereas the latter select a “phi-complete” Agr in their IP complement. They furthermore assume that only a phi-complete Agr can check Case on a DP. Consequently, when a predicate selects a phi-defective Agr, the embedded subject remains active and moves up first to matrix [Spec,vP] for theta checking and then to matrix [Spec,IP] for Case checking.

Although I share with Kapetangianni & Seely (2008) (and Alexiadou et al. 2010) the view that Greek controlled complements involve movement, my primary concern with their implementation is that it is stipulative: the dichotomy ‘selects a phi-defective Agr’ vs. ‘selects a phi-complete Agr’ is not linked to any independently detectable property of the embedding predicates. We can dispense with the distinction between phi-complete and phi-defective Agrs by instead appealing to the monoclausal/biclausal distinction as what regulates whether movement takes place.

6.6.5 Clause union

Roussou’s (2009) approach to Greek complement control differs markedly from all of the others considered above in that rather than taking the controllee to be pro or PRO or A-trace, Roussou takes the mood particle na itself to serve as the subject of the embedded clause. Starting from the
observation that *na*-clauses are unlike *oti*-clauses in disallowing their subject from appearing in canonical [Spec,IP] position ((74a) vs. (74b)), Roussou proposes that *na* is a nominal locative element that satisfies the EPP and (with the help of subject agreement on the embedded verb, with which it forms a chain) determines the identity of the embedded subject. (Roussou analyzes the optional pre-*na* subject in (74a) as Topic or Focus; she is not concrete about the status of the optional postverbal subject in (74a) other than observing that pro-drop languages typically allow for postverbal subjects.)

(74)  

a. Thelo *(o Kostas) na *(o Kostas) fiji *(o Kostas)*.  
want.INP.1SG the Kostas NA the Kostas leave.INP.3SG the Kostas  
‘I want Kostas to leave.’

b. Nomizo *(o Kostas) oti *(o Kostas) efije *(o Kostas)*.  
think.INP.1SG the Kostas that the Kostas leave.INP.3SG the Kostas  
‘I think that Kostas left.’ (Roussou 2009:1822)

Roussou proceeds to argue, drawing on earlier work by Varlokosta (1994), that Greek control predicates embed complements which lack semantic tense and do not constitute their own event, and consequently trigger clause union, whereby the reference of *na* is obligatorily bound by a matrix argument. As Roussou puts it, “event composition leads to composition of argument structure as well” (Roussou 2009:1827). With a non-control predicate, on the other hand, no clause union takes place; hence, the reference of *na* is determined by agreement morphology on the embedded verb, which is itself free.

I believe that Roussou’s account is an improvement over previous ones in taking clause-hood as the factor regulating the distribution of control, and my ambition in this chapter has been to take this account one step further by proposing that control structures are literally monoclausal, thus dispensing with the need to posit *na* as the satisfier of an embedded subject position.
6.7 Extending the analysis to the dependent tense class

The purpose of this section is to discuss how the analysis presented above can be augmented to handle the third and trickiest class of predicates, namely those that admit future-oriented but not past-oriented tense mismatches and that display special restrictions on the availability of disjoint embedded subjects.

I focus here on a comparison between *thelo* ‘want’ and *prospatho* ‘try’, but the expectation is that what I say about them here extends to other members of their subclasses as well. (*thelo* ‘want’ may be the sole member of its subclass; the class containing *prospatho* ‘try’ includes at least *katafero* ‘manage’ as well. I set aside the class containing *skopevo* ‘intend’; see section 6.2.4 above for the relevant descriptive generalizations.)

Temporally, this class behaves in a uniform way in admitting future-oriented (75) but not past-oriented tense mismatches (76).

(75) a. O Kostas theli simera na figi avrio.
the Kostas want.INP.3SG today NA leave.PNP.3SG tomorrow
‘Kostas wants today to leave tomorrow.’

b. O Kostas prospathise simera na figi avrio.
the Kostas try.PP.3SG today NA leave.PNP.3SG tomorrow
‘Kostas tried today to leave tomorrow.’

(76) a. *O Kostas theli simera na efije xthes.
the Kostas want.INP.3SG today NA leave.PP.3SG yesterday
‘Kostas wants today to have left yesterday.’

b. *O Kostas prospathise simera na efije xthes.
the Kostas try.PP.3SG today NA leave.PP.3SG yesterday
‘Kostas tried today to have left yesterday.’

This class behaves in a non-uniform way, however, with respect to properties of the embedded subject. For *thelo* ‘want’, the embedded subject is completely free; there can be an overt disjoint embedded subject (77a), there can be subject agreement mismatches between the matrix and embed-
ded predicates (77b), and a silent embedded subject is optionally but not obligatorily coreferential with the matrix subject (77c).

(77) a. O Kostas theli na dhioristi o jios tu stin trapeza.
the Kostas want.INP.3SG NA be.appointed.INP.3SG the son his in.the bank
‘Kostas tried for his son to be appointed in the bank.’

b. O Yanis theli na erthun, ala afti den ta kataferan.
the Yanis want.INP.3SG NA come.INP3.PL but they NEG them.CL manage.PP.3PL
‘John tried for them to come, but they didn’t make it.’ (Spyropoulos 2008:165)

c. O Nikosi theli na fiji \(\Delta_{i/j}\)
the Nikos want.INP.3SG NA leave.INP.3SG
‘Nikos tried to leave.’ (Spyropoulos 2008:164)

For prospatho ‘try’, on the other hand, there is one important difference: as shown in (78c), when the embedded subject is covert and the matrix and embedded predicates match for subject agreement features, control becomes obligatory.

(78) a. O Kostas prospathise na dhioristi o jios tu stin trapeza.
the Kostas try.PP.3SG NA be.appointed.INP.3SG the son his in.the bank
‘Kostas tried for his son to be appointed in the bank.’ (Roussou 2009:1817)

b. O Yanis prospathise na erthun, ala afti den ta kataferan.
the Yanis try.PP.3SG NA come.INP3.PL but they NEG them.CL manage.PP.3PL
‘John tried for them to come, but they didn’t make it.’ (Spyropoulos 2008:165)

c. O Nikosi prospathise na fiji \(\Delta_{i/*j}\)
the Nikos try.PP.3SG NA leave.INP.3SG
‘Nikos tried to leave.’ (Spyropoulos 2008:164)

In addition to this language-internal difference, ‘want’ and ‘try’ also manifest a cross-linguistic split: whereas ‘want’ is seemingly universal in admitting overt disjoint embedded subjects, ‘try’ is variable in this respect, allowing them in Greek, but only in some but not all varieties of English.

(79) a. I tried for John to go. (Henry 1995:101) OZARK ENGLISH
b. ??I tried for John to go. STANDARD ENGLISH
These observations raise two related questions:

(80) a. In Greek, why does ‘try’ allow a disjoint embedded subject only when that subject is overt or when agreement features mismatch obtains, whereas ‘want’ allows a disjoint embedded subject even when these conditions are not met?

b. Crosslinguistically, why is ‘try’ variable in its tolerance for overt disjoint embedded subjects whereas ‘want’ uniformly allows for them?

I now turn to a few preliminary considerations that will impose useful restrictions on the shape that the answers to these questions must take. First, following the conclusions from chapter 4, I take the availability of future-oriented tense mismatches to be orthogonal to whether the relevant structures are monoclausal or biclausal: future-orientation is contributed by the modal/aspectual morpheme \textit{woll} and not by Tense. Therefore, future-orientation is consistent with monoclausality. But as was also argued in chapter 4, future-orientation is also consistent with the projection of an embedded T[∅], which would signal biclausality. Since temporal orientation cannot help us adjudicate, I take Wurmbrand’s (2001) crosslinguistic restructuring facts (see table 6.3) as decisive in indicating that ‘want’ and ‘try’ both participate in monoclausal structures. (In this table, ± indicates that there is inter-speaker variation or or that the predicate has more than one translation in the relevant language and these translations are non-uniform in their restructuring status. Whether or not there is significance to the ± status of ‘try’ in three of the languages in this table is unfortunately not something I will be able to establish here.)

If this conclusion is correct, then the proposals from chapter 3 above give us the tools we need to understand how Greek \textit{prospatho} ‘try’ and \textit{thelo} ‘want’ are both able to embed overt disjoint subjects despite the fact that they participate in monoclausal structures: namely, they are both like

---

5. According to Giannakidou (2009), Greek nonpast tense morphology [i.e., T[nonpast] ] in fact contributes \textit{woll}, which gives rise to a dependent time variable that must be bound by something higher in the structure. Although I avoid using the label T since I take monoclausality/restructuring to preclude the possibility of embedded T, the semantics of Giannakidou’s proposal is in principle consistent with the approach taken here.
English *want* in being able to embed the silent main verb $\emptyset_{\text{have}}$. This gives us structures like (81), where $\emptyset_{\text{have}}$ takes a *na*-phrase as its complement and introduces the subject, which then raises up over the higher predicate ‘want’ or ‘try’ and into matrix subject position. A dependent variable on the matrix predicate is obligatorily bound by the subject once the subject raises to [Spec,TP], thereby capturing the fact that both ‘try’ and ‘want’ are subject-oriented. (See chapter 2 for details.)

(81)

But the crucial thing to observe now, I claim, is that the “off-the-shelf” semantics for all of the morphemes arranged in the structure in (81) will give us back the right meaning in the case of ‘want’ but not in the case of ‘try’. Assuming the denotation for ‘want’ from chapter 3 and ignoring tense and aspect, the predicted meaning for (81) when *theli* ‘want’ is chosen as F is as given in (82).

(82) O Kostas *theli* na dhioristi o jios tu stin trapeza.  
the Kostas want.INP.3SG NA be.appointed.INP.3SG the son his in.the bank  
‘Kostas wants his son to be appointed in the bank.’
≈ ‘In all the most desirable worlds in Kostas’s doxastic alternatives, there is an event of Kostas’s son being appointed in the bank.’

The predicted meaning accords with intuition: the subject (Kostas) bears a particular attitude toward the prejacent proposition (Kostas’s son being appointed in the bank). In (81), this meaning is implemented by taking the subject to be introduced by ∅ have and then integrated semantically by binding the individual variable associated with ‘want’ so that the only role it plays in the meaning is that of attitude holder.

When prospathise ‘tried’ is chosen as F, however, then the predicted meaning for (81) is as given in (83), depending on whether we adopt the semantics for try proposed by Sharvit (2003) or by Grano (2011).

(83) O Kostas prospathise na dhioristi o jios tu stin trapeza.
the Kostas try.pp.3sg NA be.appointed.inp.3sg the son his in.the bank
‘Kostas tried for his son to be appointed in the bank.’

**Sharvit 2003 approximation:** ‘There was some event that has a sufficiently realistic chance of developing into an event of Kostas’s son being appointed in the bank, and in all the most successful worlds in Kostas’s doxastic alternatives, this outcome obtains.’

**Grano 2011 approximation:** ‘An event of Kostas’s son being appointed in the bank was underway (i.e., realized to a degree above zero), and the progression of this event is in line with Kostas’s intentions.’

Both of these approximated meanings are too weak: they fail to capture the fact that not only must the event in question be among Kostas’s ‘success worlds’ (à la Sharvit) or ‘in line with Kostas’s intentions’ (à la Grano), Kostas must also be actively engaged in bringing about the relevant outcome. In other words, it is not enough for him to have the right attitude, he must also be a participant in the prejacent event. This idea is corroborated by the intuition of native Greek speakers who say
that sentences like (83) involve a causative component (see e.g. Terzi 1992). What this suggests is that in order to use $\emptyset_{\text{have}}$ with *prospatho* ‘try’, it is not enough for the introduced argument to bind the attitude-holder position associated with ‘try’, it must also bind a variable in the prejacent event description. Therefore, I propose that the underlying structure for the sentence in (83) is as in (84), where the *na*-phrase combines with a silent causative predicate. This causative predicate includes a variable corresponding to the agent of causation, and it is bound by the argument introduced by $\emptyset_{\text{have}}$. In this way, the situation is similar to nominal complement structures like *John wants a car* on the analysis proposed in chapter 2, built on Sæbo’s approach to overt *have*: in these nominal complement structures, the argument introduced by $\emptyset_{\text{have}}$ binds a variable in a silent predicate like *belonging to x*, whose function parallels that of the silent causative predicate in structures like (84).

Now we correctly capture the fact that the subject must not only have the right attitude but must also be involved in the event description as a causative agent. (Another analytical option which as far as I can tell is equal in empirical coverage would be to posit a more contentful version of $\emptyset_{\text{have}}$ which both introduces an argument and assigns it a ‘causative’ role, thus allowing us to dispense with a separate causative predicate. This option is more parsimonious in that it involves less null structure but at the same time it is less uniform in that it forces us to countenance more than one type of argument-introducer.)

---

6. This idea is also reminiscent of the ‘initiator role’ proposed by Farkas (1988) (see also Farkas & Giannakidou 1996) in helping define an ‘extended co-argumenthood’ between arguments of distinct predicates. A crucial difference, though, is that for Farkas (1988), this initiator role figures in the semantics of the structure even when a control relation is involved (and in fact determines the choice of controller when more than one is available), whereas on the current proposal, the causative component is found only in the absence of control, where it correlates with the presence of an ‘extra’ argument.
In addition to getting the meaning right, postulating the silent causative predicate also helps us make sense of the Greek-internal and crosslinguistic exceptional behavior of ‘try’ with respect to the availability of embedded subjects. In Greek, I suggest that due to a general preference for avoiding null structure, \( \text{CAUSE}(x) \) is inserted only as a ‘last resort’. Consequently, when there is no overt embedded subject and when subject agreement feature matching obtains between the higher and lower predicates, structures like (84) are ruled out in favor of ones like (85), where the subject is part of the basic event description rather than being introduced by \( \emptyset_{\text{have}} \) and binding a silent predicate \( \text{CAUSE}(x) \).

\[ \text{(84)} \]

\[
\begin{array}{c}
\text{DP} \\
\equiv \text{o Kostas}_1 \\
\text{FP} \\
\equiv \text{prospathise}(1) \\
\equiv \emptyset_{\text{have}} \\
\text{naP} \\
\equiv \text{na dhioristi o jios tu stin trapeza}
\end{array}
\]

\[ \text{CAUSE}(1) \]

7. Another piece of evidence for the ‘last resort’ status of \( \text{CAUSE}(x) \) is the observation due to Terzi (1992) that a disjoint embedded subject under ‘try’ cannot be targeted by \( wh \)-movement (ia), unlike what we find in the case of ‘want (ib):

(i) a.*?Pii/Pia pedia prospathise Maria na kerdisoun?
   who/which children try.3SG.PP Mary NA win.3PL.INP
   ‘Who/which children did Mary try to win?’ (Terzi 1992:38)

b. Pii/Pia pedia theli i Maria na diavasoun?
   who/which children want.3SG.INP the Mary NA read.3PL.INP
   ‘Who/which children does Mary want to read?’ (Terzi 1992:38)
Furthermore, we can understand crosslinguistic variation in terms of relative tolerance for posit-
ing the silent causative predicate in $\emptyset_{\text{have}}$-complements to *try*: some languages allow it and others
do not. With ‘want’, the situation is different: all that it needs is an attitude holder, and so assum-
ing $\emptyset_{\text{have}}$ is available ‘for free’ to introduce this attitude holder, a disjoint embedded subject
is always available without having to posit an extra silent predicate. This, I claim, is responsi-
ble for its greater language-internal and crosslinguistic tolerance for embedded disjoint subjects.
This crosslinguistic variation is all the more expected if we understand ‘last resort’ CAUSE(x) as
a kind of coercion mechanism: see Lin & Liu 2005 and Sawada & Grano 2011 for other proposed
instances of crosslinguistic variation in the availability of particular coercion mechanisms.

I conclude this section with a brief discussion of what emphatic *KANENA* licensing and inverse
scope (see section 6.4 for context) can tell us about the structure of sentences with *thelo* ‘want’
and *prospatho* ‘try’. (86) indicates that the presence vs. absence of an overt embedded subject with
‘want’ and ‘try’ does not have an effect on the availability of long-distance licensing of emphatic
*KANENA*. This suggests that $\emptyset_{\text{have}}$ (and in the case of ‘try’, CAUSE(x)) do not give rise to bi-
clausality: although semantically $\emptyset_{\text{have}}$ and CAUSE(x) are both predicates, they are not associated
with their own clausal projections but rather are part of a single extended clausal projection.

\[(85)\]
\[
\begin{array}{c}
\text{DP} \\
o \text{Yanis}_1
\end{array}
\begin{array}{c}
\text{FP} \\
\text{F} \\
\text{prospathise}(1) \\
n\text{naP} \\
n \text{adhiori}st \ stin \ trapeza \ t_1
\end{array}
\]

(86) a. O Yanis den theli na lisi (o Kostas) KANENA provlima. 
the Yanis not want.inp.3sg NA solve.pnp.3sg the Kostas any problem
‘Yanis does not want (for Kostas) to solve any problem.’

b. O Yanis den prospathise na lisi (o Kostas) KANENA provlima. 
the Yanis not try.pp.3sg NA solve.pnp.3sg the Kostas any problem
‘Yanis did not try (for Kostas) to solve any problem.’
Scope data, however, indicate a more nuanced picture: inverse scope is available with ‘want’ and ‘try’ in the absence of an overt embedded subject (87), but when an overt embedded subject is added, inverse scope becomes unacceptable (88).

(87) a. Kapios fititis theli na lisi kathe provlima.
    some student want.inp.3sg na solve.pnp.3sg every problem
    ‘Some student wants to solve every problem.’
    \[ \exists > \forall/\forall > \exists \]
    b. Kapios fititis prospathise na lisi kathe provlima.
    some student try.pp.3sg na solve.pnp.3sg every problem
    ‘Some student tried to solve every problem.’
    \[ \exists > \forall/\forall > \exists \]

(88) a. Kapios fititis theli na lisi o Kostas kathe provlima.
    some student want.inp.3sg na solve.pnp.3sg the Kostas every problem
    ‘Some student wants for Kostas to solve every problem.’
    \[ \exists > \forall/ * \forall > \exists \]
    b. Kapios fititis prospathise na lisi o Kostas kathe provlima.
    some student try.pp.3sg na solve.pnp.3sg the Kostas every problem
    ‘Some student tried for Kostas to solve every problem.’
    \[ \exists > \forall/ * \forall > \exists \]

What this shows us is that inverse scope has stricter licensing conditions than does emphatic KA-NENA, which suggests that there are factors at play aside from clause-boundedness in conditioning the availability of inverse scope.

6.8 Conclusion

In this chapter, I investigated the syntax of control and restructuring in Greek. Greek makes for an enlightening case study for two reasons. First, Greek embedded clauses are uniformly finite in that the verb always inflects for subject agreement and (seemingly) for tense and aspect, which poses a challenge for the view that certain embedding predicates universally instantiate monoclusal structures. Second, Greek is exceptional in permitting overt embedded subjects with ‘try’ and ‘manage’, thus giving us the opportunity to better understand how universal principles of the syntax-semantics of control and restructuring interact with language-specific parameters to yield
variation in a constrained way.

As for the uniformly finite nature of Greek embedded clauses, the key idea that I capitalized on is that despite this uniform finiteness, certain embedding predicates impose stringent requirements on the range of agreement and temporo-aspectual features on the embedded verb. In particular, I followed Spyropoulos (2008) and others in identifying a class of **anaphoric tense** embedding predicates that require both that their embedded verb have a tense anaphoric to matrix tense (and with a morphological shape homophonous with nonpast tense) and that that the embedded subject be anaphoric to the matrix subject (morphological exponent: agreement feature matching between embedded and matrix verbs). I proposed that this class of predicates in Greek instantiates monoclausal structures; the properties of the embedded tense and embedded subject then follow from the fact that in a monoclausal domain, there is just one argument structure and one tense. If this view is on the right track, then it entails two points of crosslinguistic morphosyntactic variation: first, some languages are like Greek in not distinguishing morphologically between nonpast and tenseless verb forms, whereas other languages are like English in making such a distinction. Second, some languages are like Greek in that Agr co-occurs with each verb in the clause, whereas other languages are like English in that Agr occurs just once per finite clause. These two points of crosslinguistic variation are not necessarily tied to each other, however, since the existence of inflected infinitives in Portuguese (Raposo, 1987) and Hungarian (Tóth, 2000) shows us that it is possible for Agr to occur on a morphologically tenseless form.

As for the grammaticality of overt embedded subjects with ‘try’ and ‘manage’ in Greek, I proposed that, similarly to the account of English *want* in chapter 2, Greek ‘try’ and ‘manage’ instantiate monoclausal structures but are able to introduce an extra argument via the silent main verb $\emptyset_{\text{have}}$. But the crucial difference between Greek ‘try’/‘manage’ and ‘want’ is that when ‘try’/‘manage’ embeds an overt subject, there is a hidden causative component that links the matrix subject to the embedded event description as a causative agent. I proposed to syntacticize this causative component as the silent predicate CAUSE(x), thus allowing us to reduce crosslinguis-
tic variation in the acceptability of overt embedded subjects with ‘try’/‘manage’ to crosslinguistic variation in the availability of \text{CAUSE}(x)\. I furthermore showed that even internally to Greek, the distribution of \text{CAUSE}(x) is limited, projected only when necessary as a ‘last resort’ strategy. The conclusion therefore is that language-specific coercion mechanisms may disrupt what is otherwise a crosslinguistically uniform way in which the semantics of a predicate relates to its syntax.
CHAPTER 7
CONCLUSION

I will take this opportunity to distill what I see as the five central themes of the dissertation, organized here in such a way that each one builds on the one before it: empirical, syntactic, semantic, syntax-semantics interface, and crosslinguistic.

I. Empirical: The primary empirical contribution of this dissertation is correlational, showing that the class of predicates standardly analyzed as ‘subject control’ predicates splits into two classes, as evidenced by the clustering of properties summarized in table 7.1.

<table>
<thead>
<tr>
<th>Property</th>
<th>Exhaustive Control</th>
<th>Partial Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Availability of partial control</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>b. Restructuring/monoclausality effects</td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>c. Availability of finite complementation</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>d. Availability of overt disjoint embedded</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>e. Embedded Tense projection</td>
<td>*</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 7.1: Summary of empirical splits in subject control structures

The relationship between the availability of partial control (a) and the appearance of restructuring/monoclausality effects (b) figures centrally since it establishes a link between the syntax of control and the syntax of restructuring that demands an explanation (Wurmbrand 1998; Barrie 2004; Cinque 2006; cf. Landau 2000; Wurmbrand 2001, 2002). The correlation to the availability of finite complementation (in English) (c) and the availability of overt disjoint embedded subjects (crosslinguistically) (d) provide important crosslinguistic support for the reality of the two classes since they make it possible to detect the split even in languages that lack classic restructuring effects such as clitic climbing. Finally, the correlation to the presence of an embedded Tense projection (e) is inevitably the most theory-bound but is important given the central role that Tense has played in three relevant areas of research: the distribution of control (Stowell, 1982; Pesetsky, 1992; Martin, 1996, 2001; Bošković, 1997), the contrast between exhaustive and partial control (Landau, 2000), and the syntax of restructuring (Wurmbrand, 2001). As stated in the introduction, the idea that
complement control comes in two varieties keyed to some factor or set of factors is nothing new; Landau (2011) traces a version of this idea back to Rosenbaum 1967. In that sense, the empirical contribution of this dissertation follows in the footsteps of a long tradition. In laying out these correlations, I hope to convince theorists that they deserve to be taken seriously in any analysis of complement control; while I have presented my own take on how they are to be captured, this of course does not preclude the possibility of alternative ways of explaining the correlations.

II. Syntactic: The central syntactic claim of the dissertation is that the best way of making sense of the aforementioned empirical splits is via the proposal that exhaustive control predicates realize inflectional-layer functional heads that instantiate monoclausal raising structures (1) whereas partial control predicates realize lexical verbs that instantiate biclausal PRO-control structures (2).

(1) **EXHAUSTIVE CONTROL** predicates

\[
\text{John}_1 \quad FP \quad \text{try} \quad \text{John}_1 \quad vP \quad \text{to be happy}\n\]

(2) **PARTIAL CONTROL** predicates

\[
\text{John}_1 \quad VP \quad \text{hope} \quad \text{PRO}_1^{(+)} \quad \text{to be happy}\n\]

We can further divide this syntactic claim into three subcomponents. First is the monoclausal / biclausal distinction: this is meant primarily to capture the distribution of restructuring effects and embedded Tense projections (crosslinguistically) and the distribution of finite complementation (in English). The proposal is significant insofar as it takes classic restructuring effects such as Romance clitic climbing — which are optional and language-specific phenomena — as a window into what is a stable and crosslinguistically valid division between two kinds of control predicates.

Second is the raising/PRO distinction, whose primary role in the analysis is to track the availability of partial control: PRO structures allow partial control because PRO is a bound pronoun and partial binding is a general property of (certain kinds of) bound pronouns; raising structures
disallow partial control because the interpretation of A-chains (and the interpretation of the silent pronoun proposed to be part of the meaning of predicates like *try*) involve a kind of binding which (by hypothesis) must be exhaustive. This proposal is significant in that it implies that both movement theories and PRO theories of control are correct when restricted to their appropriate domains of applicability (a proposal also entertained for partially overlapping reasons by van Urk (2010)).

Third and final is the functional/lexical distinction, which plays two roles in the analysis. First, it explains the non-availability of overt disjoint embedded subjects with the exhaustive control class. Inflectional-layer functional heads do not introduce arguments; they simply pass up the highest argument from their complement. Taking exhaustive control predicates to be inflectional-layer functional heads, we correctly predict that they never involve more arguments than what is introduced by the lower predicate. Second and more importantly, the functional/lexical distinction plays a key role in my explanation for why we can predict whether a predicate will fall in the partial control class or the exhaustive control class based on its meaning. (See Syntax-semantics interface below.) This part of the proposal thereby contributes to ongoing work on the nature of the functional/lexical distinction. (See e.g. Corver & van Riemsdijk 2001.)

III. Semantic: As described above, I advocate a movement/raising analysis for exhaustive control predicates. In that connection, a primary semantic contribution of the dissertation is in showing that there is a way to implement a ‘movement theory of control’ in a type-driven compositional semantics that maintains uniformity in how movement interacts with saturation. In a system like that described in Heim & Kratzer 1998, DP movement involves a semantics whereby the trace or lower copy saturates in its base position, and the moved DP or higher copy is integrated back into the structure via predicate abstraction (“saturate-move-abstract-saturate”). But the most obvious way of implementing the movement-based theory of control seems to require a single argument to saturate two positions, which would demand a movement operation that does not involve predicate abstraction (“saturate-move-saturate”). Rather than complicating the semantics of movement so that it comes in two varieties that must be somehow constrained, I build on work by Hacquard
arguing that modals contain variables that are bound in a structurally local way and by Giannakidou (1998) arguing that some variables in natural language are dependent in the sense that they cannot get their value from the context. The result is a movement-based approach to control that allows us to maintain the generalization that movement always results in predicate abstraction by implementing the relationship between the control predicate and the moved DP as one of binding rather than saturation (“saturate-move-abstract-saturate-bind”).

IV. Syntax-semantics interface: The dissertation’s primary contribution to our understanding of the syntax-semantics interface is its proposal, building on Cinque 2006, that restructuring predicates restructure because they match the meaning of an inflectional-layer functional head and are able to realize it in a way that satisfies general constraints on clausal architecture. I also suggested that this reduces to a more general principle of economy: the inflectional layer of the clause makes available a variety of modal, temporal, and aspectual meanings, and so the most economical way to build a structure using a verb that matches one of these meanings is to realize it directly in the corresponding functional position rather than resorting to a biclausal structure. The key observation underpinning this proposal is the generalization (to my knowledge original to this dissertation) that restructuring predicates all have meanings that correspond to heads below Tense in Cinque’s IP hierarchy whereas non-restructuring predicates all have meanings that correspond to heads above Tense in Cinque’s IP hierarchy. If this generalization is accurate as I believe it is, then any adequate theory of restructuring must account for it. In the system proposed in this dissertation, it follows from the fact that the subject of a sentence can be interpreted no higher than [Spec,TP]; therefore, an attempt at restructuring a predicate above Tense in Cinque’s hierarchy results in a dependent variable that is unbound and thus illicit. In a lexical theory of restructuring, whereby restructuring involves a lexical verb combining with a truncated complement (Wurmbrand, 2001, 2004), it is not obvious how a generalization like this would be captured.

V. Crosslinguistic: A focused study of English in comparison with Mandarin Chinese and modern Greek provide initial support for the universality of the proposals outlined above: these
three languages exhibit widespread agreement with each other (and with the languages in Wurm-
brand’s (2001) survey) with respect to how the semantic class of a control predicate correlates with
its syntactic properties. This agreement holds despite the fact that English, Mandarin and Greek are
very different in the way their grammars treat embedded clauses, thus suggesting that the prin-
ciples at work in the syntax of control and restructuring are largely universal, keyed to the semantics
of the embedding predicates and not highly affected by superficial morphosyntactic properties of
particular languages. (See also Stiebels’ (2007) distinction between ‘inherent control’ and ‘struc-
tural control’.) At the same time, however, the comparison between English and Greek turned up
an interesting point of variation: ‘try’ and ‘manage’ disallow overt disjoint embedded subjects in
English but allow them in Greek. I accounted for this point of variation via the proposal that Greek
admits as a ‘last resort’ coercion strategy the introduction of a silent causative predicate that pro-
vides a semantic role for the extra argument. This case study of course only scratches the surface of
what could be a much broader crosslinguistic survey, but if it is on the right track, it implies that the
(non-)availability of certain kinds of coercion mechanisms could be responsible for superimposing
points of variation on what is underlyingly a universal grammar of control and restructuring.
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