ASPECTS OF CONTROL AND COMPLEMENTATION IN TURKISH

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ABSTRACT

ASPECTS OF CONTROL AND COMPLEMENTATION IN TURKISH

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This thesis investigates fundamental questions surrounding the phenomenon of control, with an emphasis on control in Turkish, as well as the behaviour of control verbs in non-infinitival environments, which have received little attention previously. I focus solely on the cases of obligatory control (OC) which constitute the only kind of control that is conditioned by the matrix verb alone. This approach is couched in Combinatory Categorial Grammar (CCG) where the control verb projects the necessary syntactic and semantic information. In particular, I argue that the control behaviour is an entailment associated with the verb itself, and that variable, split and partial control are instances of OC. Hence, no special mechanism/structure is needed to account for their interpretation. As to the syntactic and semantic status of the complement, I maintain that the complement is a bare VP in syntax and denotes a property in semantics.

Building upon the conclusions reached about OC, I attempt to account for additional complementation patterns of OC verbs. I argue that here too the matrix verb has a crucial role in ruling in and out possible complement types. Finally, I note that control involves much more than just figuring out the reference of the "unexpressed" subject of the complement, and I furthermore propose that the additional frames of an OC verb provide important clues as to its lexical meaning, which are argued to be relevant for the acquisition of control.

Keywords: Control, Complementation, Categorial Grammar, Acquisition, Turkish

ÖZ

TÜRKÇE'DE DENETLEME VE TÜMLEMENİN YÖNLERİ

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Bu tez, Türkçe'de denetlemeye odaklanarak, denetleme ile ilgili temel soruları ve denetleme eylemlerinin mastar tümleçler dışındaki davranışlarını incelemektedir. Tek başına ana eylem tarafından belirlenen yegâne denetleme türü olan zorunlu denetlemeye (ZD) odaklandığımız bu çalışmanın temel yaklaşımı, denetleme eyleminin gerekli olan sözdizimsel ve anlambilimsel bilgiyi yansıttığı bir dilbilgisi kuramı olan Bileşimsel Ulamsal Dilbilgisi (İng. Combinatory Categorial Grammar (CCG)) çerçevesinde ifade edilmektedir. Özel olarak, denetleme davranışının eylemin kendisinden kaynaklanan bir gereklilik (İng. entailment) olduğu ve değişken, ayrık ve kısmi denetleme adlarıyla incelenen yapıların da aslında zorunlu denetlemenin örnekleri olduğu iddia edilmektedir. Bu yüzden, adı geçen denetleme türlerini açıklamak için özel mekanizmalara veya yapılara gerek olmadığı öne sürülmüştür. Tümlecin ise sözdizimsel olarak bir EÖ, anlambilimsel olarak da bir nitelik (İng. property) olduğu savunulmaktadır.

ZD ile ilgili gözlemlerimize dayanarak, bu eylemlerin diğer tümleme kalıpları açıklanmaya çalışılmış; olası tümleme kalıpları ile olan ilişkisinde, ana eylemin önemli bir rolü olduğu gözlemlenmiştir. Son olarak, denetlemenin, tümlecin "ifade edilmeyen" öznesinin gönderimini anlamaktan daha fazlasını içerdiği; denetleme eylemlerinin mastar tümleçler dışındaki tümleme kalıplarının, eylemin sözcüksel anlamıyla ilgili çeşitli ipuçları sağladığı ve bu iki noktanın da denetlemenin edinimiyle bağlantılı olduğu iddia edilmektedir.

Anahtar Kelimeler: Denetleme, Tümleme, Ulamsal Dilbilgisi, Dil Edinimi, Türkçe

To the memory of my grandmother

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TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

A recurring theme that has been the topic of a substantial amount of work in modern linguistics involves the interpretation of sentences exemplified in (1), where the "unexpressed" argument of the infinitival complement is understood to be the subject of the matrix verb in (1a,b), and the object thereof in (1c):

(1) a. John wants [to go].

b. John promised Mary [to go].

c. John persuaded Mary [to go].

The fundamental question here is why the "missing" arguments of the infinitival complements are interpreted in the respective ways, i.e. as *John* in (1a,b) and as *Mary* in (1c). To put more precisely, why is it the case that the valence of the embedded verbs seems to be satisfied despite the fact that they are non-finite?

This type of constructions has come to be known as *control* constructions in the sense that a matrix argument, the *controller*, controls (bears a relation to or supplies) the interpretation of the complement's subject, the *controllee*. The verbs that mediate such a relation are called *control* verbs.

This fundamental puzzle surrounding control constructions has received considerable attention since the beginnings of Transformational Grammar (Chomsky, 1965; Rosenbaum, 1967) and subsequently has also been taken up in non-transformational frameworks, e.g. Montague Grammar, G/HPSG and LFG, to name but three. Additionally, it has given rise to new questions which, to the extent that they are answered satisfactorily, have enabled us to have a better understanding of the phenomenon. As a motivation for a large part of the present study, I have put these questions together in (2) from some of the major previous works (Chomsky, 1981; Farkas, 1988; McCloskey, 1991; Landau, 1999):

(2) a. What are the formal constraints on control? In particular, what kind of environments are required?

b. What is the syntactic and semantic status of the controllee? Is it always the subject or always the actor? What elements/positions can be controlled?

c. How are the referential and semantic properties of the controllee determined? In particular, how are we to determine the controller when there is more than one candidate?

d. How is the set of possible controllers determined? What elements/positions can control?

e. What is the syntactic and semantic status of the controlled complement? In particular, is it clausal (and denotes a proposition), or just a bare VP (and denotes a property) or can it exhibit a mismatch between syntax and semantics?

In addition to these, one of the first questions that comes to mind is why these verbs—and not any other verb—behave in this curious way, which, naturally, calls for an explanation. Given that (obligatory) control is a cross-linguistically consistent phenomenon despite typological differences (Van Valin, 2005, p.241), the proper treatment, as I will argue, is to be found in the semantics of the verbs which is used extensively in classifying them into three subclasses (as in, *inter alia*, Sag & Pollard, 1991; Jackendoff & Culicover, 2003; Van Valin, 2005).

This thesis sets out to investigate two interrelated topics: (i) control in Turkish with an emphasis on the theoretical questions mentioned in (2), and, (ii) the behaviour of control verbs in non-canonical environments and whether this point can also be accounted for by the observations made in (i). The primary, but not the only, aim will be to show that what we see as additional subcategorization frames can actually be linked to the semantics of the verb to the extent that the complements a given language provides are compatible with the verb's inherent meaning. Looking at control from these two points will, as I will try to demonstrate, enable us to unify and revise the relevant points made in the previous studies on control in Turkish and, as will become clearer towards the end, to suggest ways of approaching the acquisition of control.

The remaining part of this work is organized as follows: Chapter 2 lays as a background the fundamentals of control together with a review of the relevant work on control in Turkish. I will also touch upon the famous controller selection problem in this chapter. Chapter 3 provides a description of Combinatory Categorial Grammar (CCG), the principles of which I will assume throughout this study and whose conception of the interface between syntax and semantics will be pertinent to some aspects of the phenomena that we will discuss. Chapter 4 is where I go into the relation between control verbs and their

complements. This is also the place where I discuss several apparent counterarguments to the approach I endorse: the so-called controller-shift and partial control, and an argument from the binding of reflexives inasmuch as they are relevant to the points that I aim to make. Chapter 5 goes onto discuss non-canonical complementation patterns of control verbs in Turkish. Chapter 6 tries to recapitulate the points made in the previous chapters and elaborates on their relevance for the acquisition of control before we conclude in Chapter 7.

CHAPTER 2

BACKGROUND

2.1 Fundamentals of Control

In the most general case, control verbs are divided into two broad classes according to whether the "missing" argument is controlled by an argument of the matrix verb, namely *obligatory control* (OC), or whether there is no such requirement, hence the name *non-obligatory control* (NOC) which is typically found in subject and extraposed infinitives. These are exemplified in (3) and (4), respectively:

(3) John persuaded Mary to go.

(4) To go to the games this afternoon will be fun.

The cases of NOC contrast with those of OC in that the fundamental characteristics of the latter are absent in the former, e.g. no controller is required as in (4) where the interpretation is said to be arbitrary or generic; if there is a controller it does not have to be local, i.e. what is called "long-distance control" is possible where the controller is not an argument of the immediate clause containing the infinitive, etc.[1]

Compared to most of the current work on control, this thesis endorses a narrower view, adopted from Steedman (2000), as it will focus only on OC. This restriction is motivated by the fact that *only* in the case of OC does the construction rely on the matrix verb *alone*. The controller, whether it be the subject or the object, has to be a semantic argument of *both* the matrix and the embedded verb, a well-known peculiarity of control verbs distinguishing them from a superficially similar construction, namely *raising* (5):

(5) John seems to be nice.

Recall that the mainstream formulation of raising involves a movement operation whereby the base generated NP in the complement moves to the subject position, which is motivated

[1]For further details of NOC, see Landau (1999, Chap. III).

by the observation that the matrix verb does not assign an external theta-role. Let me note that the well-known property of the controller we have mentioned above is an important one—although it is often overlooked—to which we will return to at various points later on. I will stick to this formulation for the time being but will elaborate more on the relation between the controller and the two verbs in these constructions in Chapter 4.

In the foregoing discussion, I will also take up in some detail other types of control, which have some relevance to the cases of OC, but have led most of the researchers to classify them differently than canonical OC verbs, namely *partial*, *split/distributive* and *variable* control. Suffice it to say here that I will consider them as instances of OC and will thus argue that a distinction is unnecessary. In short, I will subscribe to, and in relevant places will defend, the observations made in Chierchia (1983, pp.19-20) about the nature of OC, to which I have added the impossibility of *de re* and *strict* readings from Landau (1999, p.43):

(6) a. There must be an overt controller.

b. There can be no distributive control[2].

c. Controller must be locally available.

d. *De re* interpretations are impossible.

e. Strict-identity under VP-ellipsis is impossible.

Before going into the discussion of OC verbs in Turkish, there are two crucial points that I would like to emphasize. The present approach differs from most of the previous work on control in Turkish in *not* equating (obligatory) control with coreference in finite or non-finite complements. Indeed, as Bozşahin (2004) indicates, referential dependency cannot imply control as a *lexical* property of the verb. We take control not solely as a relation of referential dependency, as, for example, in Bresnan (1982, p.372), but as a construction involving only certain kinds of verbs where such dependencies are *necessary* conditions, not *sufficient* ones.

By a similar token, the complements of verbs themselves cannot be used as criteria to claim that a verb behaves like a control verb because clearly infinitives are not restricted to OC verbs in Turkish. The point is that only if the matrix verb is of the required type will the suitable environment yield the desired control reading. Hence, control, as a property

[2]This is one of the controversial points given the recent discussions of partial and split control (e.g., Landau, 1999; Słodowicz, 2007), to which most studies on control seem to have attributed theoretical significance. I will return to them later.

stemming from the lexical semantics of an OC verb, implies coreference in the proper environment, i.e. where an infinitival complement is present, but is not implied by either an infinitive or mere coreference.

2.2 Overview of Control in Turkish

2.2.1 Obligatory Control in Turkish

As far as the classification of control verbs and the identification of controllers are concerned, most of the previous work on Turkish have tried to exploit structural/configurational relations like c-command or case-marking (Kerslake, 1987; Özsoy, 1987, 2001; Kural, 1994, as cited in Słodowicz (2007)). In a more recent study, Oded (2006) adopts the formulation in Landau (1999) and argues for parallels in Turkish mostly along the same lines[3].

On the other hand, Erguvanlı-Taylan (1990) and Słodowicz (2007) have argued that strictly structural accounts are insufficent and that a fuller explanation must take verb semantics into consideration. Looking at OC from a different angle and questioning the assumption that universally, only syntactic subjects can be controlled (cf. PRO Theorem), Bozşahin (2004) shows that Turkish controls the syntactic subject like English but unlike Dyirbal or Tagalog where the controllee is the *semantic* subject which is not realized as the syntactic subject.

Turkish uses the nominalizing suffixes *-mA*, *-mAK*, *-(y)AcAK* and *-DIK* to derive verbal nouns that can be used in complementation. The suffix *-mAK* singles out from the rest of these suffixes as it resists personal agreement (7e), but it aligns with them in allowing case-marking. The sentences below exemplify these possible complement types all of which are here complementing the verb *ikna et-* 'persuade'. In passing, notice that the verb is polysemous as in English:

(7) a. Ali$_i$ Can$_j$'ı [kitab-ı oku-yacağ-ın$_{i/j/k}$]-a
A.NOM C.-ACC book-ACC read-AcAK-POSS.3SG-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can that s/he will read the book.'

b. Ali$_i$ Can$_j$'ı [kitab-ı oku-duğ-un$_{i/j/k}$]-a
A.NOM C.-ACC book-ACC read-DIK-POSS.3SG-DAT

[3]We will unfold the relevant points of these studies as we go along.

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can that s/he has read the book.'

c. Ali$_i$ Can$_j$'ı [kitab-ı oku-ma-sın$_{i/j/k}$]-a
A.NOM C.-ACC book-ACC read-mA-POSS.3SG-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can that s/he read the book.'

d. Ali$_i$ Can$_j$'ı [kitab-ı oku-mağ$_{*i/j/*k}$]-a
A.NOM C.-ACC book-ACC read-mAK-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can to read the book.'

e. *Ali Can'ı [kitab-ı oku-mağ]-ı-sın-a
A.NOM C.-ACC book-ACC read-mAK-ACC-POSS.3SG-DAT

ikna et-ti.
persuade-PAST.3SG

Clauses with *-(y)AcAK* refer to the future while those with *-DIK* refer to situations prior to the time of utterance and are usually factive (Słodowicz, 2007, p.129). Traditionally, complements bearing these two suffixes have been claimed not to yield control readings because it is argued that the obligatory possessive marker, which is considered to be INFL or AGR, projects an (optional) NP and thus the complements will not be denoting properties. For the remaining two nominalizers, on the other hand, Kural (1994, as cited in Słodowicz (2007)) uses the term infinitive. A crucial difference between them, however, is that since *-mA* clauses require personal agreement, if one is to follow George & Kornfilt (1981) in defining finite phrases in Turkish as those carrying agreement then these complement types will also fail to project VPs, and hence are ineligible as complements required by OC verbs (Bozşahin, 2004)[4]. We are, therefore, left with the complements formed with

[4]Moreover, disregarding this point, as is the case in most of the previous accounts, e.g. Erguvanlı-Taylan (1990), Haig & Słodowicz (2004), Oded (2006), Słodowicz (2007), seems to me to be at

-mAK as the only non-finite complementation pattern and the only environment where we can observe *true* control[5].

Słodowicz adopts the traditional distinction above and, following the general approach to control constructions in Stiebels (2007), further divides this set into two classes, namely *control-inducing* and *control-neutral* structures, each containing clauses formed with two of the four suffixes above. According to this formulation, control-inducing complements are those which presuppose control when used in complementation. Infinitives (in his case both *-mA* and *-mAK*) represent a good example because their unexpressed argument has to be identified with a matrix argument (p.127). Control-neutral structures (finite clauses and nominalizations with *-(y)AcAK* and *-DIK*), on the other hand, do not presuppose control but yield control readings—more precisely coindexations—when they appear as complements of OC verbs. He cites (8) from Erguvanlı-Taylan (1990, p.51) as evidence against the traditional view that *-mA* and *-mAK* obligatorily induce control (p.134):

(8) Ben [Çin-le ticari ilişki-ler-e gir-meğ]-i
I.NOM China-with trade relation-PL-DAT enter-mAK-ACC

destekl-iyor-um.
support-PROG-1SG
'I support getting into trade relations with China.'

Słodowicz claims that the prediction of the accepted view would be that nominalized infinitives should be control-inducing despite the fact that there is no control in the relevant sense in (8). However, this is hardly a surprise. Infinitives, as I have noted above, are not restricted to OC verbs, neither in Turkish nor in English (and perhaps nor in other languages having true infinitives) but can be realized as syntactically identical complements of different verbs. More importantly, it is not the syntactic structure *per se* but the verb requiring it that can instigate control. Observe that in lieu of an attitude verb like *destekle-* 'support' if one goes for an OC verb like, say, *söz ver-* 'promise' one immediately obtains the desired effect (9):

odds with the essence of the phenomenon because what makes control interesting—which possibly made it a point of inquiry as well—is the fact that despite lacking overt agreement the valence of the embedded verb is satisfied by an argument of the matrix verb, the controller, which triggers agreement on the main verb, an observation dating back to Pāṇini (Gillon, 2007) and revived in generative grammar (e.g. Chomsky, 1965, 1981).

[5]The infinitives formed with *-mAK* behave like NPs in terms of case-marking. Depending on the matrix verb the complement can carry the nominative (-Φ), accusative (*-I*), dative (*-A*), ablative (*-DAn*) and locative (*-DA*) suffixes.

(9) Ben$_i$ [Çin-le ticari ilişki-ler-e gir-meğ$_i$]-e
I.NOM China-with trade relation-PL-DAT enter-mAK-DAT

söz ver-di-m.
promise-PAST-1SG
'I promised to get into trade relations with China.'

Putting aside, for the time being, the fact that *-mA* complements cannot yield the necessary environment for control structures, the implication of the traditional view is that only when the verb is of the required type does the right environment give the right interpretation and not that the environment can "induce" control regardless of the matrix verb, as is also remarked in Bozşahin (2004)[6].

Before passing to the details of controller selection let me say a few words about the 'other' types of control that are discussed in previous studies.

2.2.2 Other Types of Control

Słodowicz (*ibid.*) cites *öner-* 'propose' and *teklif et-* 'propose' as *variable control* verbs. Following Erguvanlı-Taylan (1990, p.55), he provides the example below as an instance of variable control where the controller can switch depending on the context:

(10) Tolga$_i$ Orhan'a$_j$ [o bina-yı satın al-mağ$_{i/j}$]-ı
T.NOM O.-DAT that building-ACC buy-mAK-ACC

öner-di.
propose-PAST.3SG
'Tolga proposed to Orhan to buy that building.'

Erguvanlı-Taylan observes that in a situation where *Tolga* is the legal advisor of *Orhan* and suggests him to buy a certain building then the verb displays object control. If, on the other hand, we switch the roles and consider *Tolga* to have come up with the idea of his (*Tolga*'s) buying a certain building then the controller will be the subject[7]. However, as

[6]Other verbs argued to have similar behaviour are *karşı olmak* 'be against', *desteklemek* 'support', *doğru bulmak* 'find something right', *yanlış bulmak* 'find something wrong', *günah saymak* 'consider something immoral', *bahsetmek* 'talk about', *tartışmak* 'discuss' all of which can be classifed as what Erguvanlı-Taylan (1990, p.51) calls 'evaluative verbs' where the speaker expresses his/her personal evaluative judgement on a certain principle or puts forth his/her stand on a certain subject, etc. and as such are not OC verbs in the first place.

[7]There is also a split control reading (see below) here where, say, *Tolga* and *Orhan* are business partners and the former proposes their buying of the building. The split control reading here can be obtained regardless of these two meanings of the matrix verb because it depends on that of the embedded predicate.

Erguvanlı-Taylan also points out, it is not only the reference of the controller but also the meaning of the verb that changes between these two interpretations. In the former case, which Erguvanlı-Taylan calls 'manipulative' reading, *öner-* has the meaning of propose in the sense that the proposer wants/suggests the proposee to carry out/consider the proposed idea. The other interpretation obtains when the verb behaves like a cognitive/utterance verb.

Another issue is that of *partial control* (PC) (Landau, 1999), where the matrix subject is properly contained in the group which carries out the action denoted by the VP complement. Słodowicz argues that PC is not exhibited in Turkish. He provides the example below (p.148) as evidence and claims that they are ungrammatical. However, I think the sentences are perfectly fine and the verb seems to allow for such collective predicates (I follow Landau in notating PC with the subscript $i+$. We will have more to say about PC in Chapter 4):

(11) Ali$_i$ [park-ta buluş-mak$_{i+}$] ist-iyor.
A.NOM park-LOC meet-mAK want-PROG.3SG
'Ali wants to meet in the park.'

Lastly, as also noted by Słodowicz, Turkish exhibits what has come to be called *split control* (12) where both of the matrix arguments are taken to satisfy the "missing" argument of the embedded predicate[8]:

(12) Ali$_i$ Can$_j$'ı [park-ta buluş-mağ$_{i+j}$]-a ikna et-ti
A.NOM A.-ACC park-LOC meet-mAK-DAT persuade-PAST.3SG
'Ali persuaded Can to meet in the park.'

This concludes the typology necessary for our purposes. What I have tried to outline so far was the predictions of taking control as a lexical property of the control verb. We have seen that OC should not and, in fact, cannot be reduced to referential dependency in certain environments. Rather, the matrix verb, if it is to be an OC verb, selects for certain complements and establishes certain dependencies.

[8]Incidentally, let me note that I am using the terms split and partial control solely for expository purposes. Except for some cases to be elaborated below, it seems that if all that matters was finding an antecedent for the "missing" argument of an infinitive, any embedded verb allowing a collective interpretation can take more than one NP as antecedent, whether they are in the matrix clause or in the discourse. I will have more to say about this later on.

2.3 Controller Selection

As mentioned in the beginning, almost every account of control has tried to come up with a principled way to determine controller identity. Dating back to the much cited work of Rosenbaum (1967), the mainstream generative grammar has tried to formulate a configurational/structural account of control relations, while acknowledging that semantics and/or pragmatics are also relevant in controller assignment. Chomsky (1980), for instance, while adopting a Rosenbaum-type Minimal Distance Principle (MDP)[9], proposes to assign each verb an arbitrary s(ubject)-control or o(bject)-control feature in their lexical entries, especially because the verb *promise* still escapes an explanation (13):

(13) a. John persuaded Mary [to go].

b. John promised Mary [to go].

Like Rosenbaum and Chomsky, Bresnan (1982) and Hornstein (1999) had to stipulate the controller identity for *promise*. The former study employed a grammatical role hierarchy, OBJ2>OBJ>SUBJ, for controller choice which, although correctly selects the object as the controller in (14b), fails to select the subject as the controller in (14a):

(14) a. Ali$_i$ Can$_j$'a [erken gel-meğ$_{i/*j}$]-e söz ver-di.
A.NOM C.-DAT early come-mAK-DAT promise-PAST.3SG
'Ali promised Can to come early.'

b. Ali$_i$ Can$_j$'ı [erken gel-meğ$_{*i/j}$]-e zorla-dı.
A.NOM C.-ACC early come-mAK-DAT force-PAST.3SG
'Ali forced Can to come early.'

Hornstein (1999), on the other hand, proposed to eliminate PRO in favor of traces by claiming that *John* in *John tried to leave* moves to [Spec, IP] after a series of Merge and Move operations, and is assigned two theta-roles. Yet, Hornstein is still forced to accept that *promise* is a "marked" case for MDP—which now derives from the Minimal Link Condition (MLC)—while *persuade* is "unmarked", but does not discuss why this is so (Culicover & Jackendoff, 2001). With this claim Hornstein fails to note that what he would classify as "marked" verbs in fact form a semantic class, namely verbs of *commitment*

[9]This principle selects the NP closest to the complement as the controller.

and verbs of *request for action*, the latter of which may sometimes exhibit controller-shift (Landau, 2003).

Williams (1980) and Manzini (1983) proposed the c-command relation in identifying possible controllers and thereby reducing the relationship between PRO and its antecedent to anaphoric binding. However, this is a theoretically distinct problem, as Farkas (1988) points out, because delimiting the set of controllers is different from the actual selection of the controller. Therefore, the idea presents at best a necessary condition but does not prefer one of the two possible c-commanding arguments in (14a,b).

Further corroboration to the claim that structural relations, like case, are not the determining factor in controller selection comes from examples like (15), where despite the same structural configuration one gets different controllers, which is reminiscent of the *promise-persuade* discussion in Jackendoff & Culicover (2003, p.520) and elsewhere:

(15) a. Ali$_i$ Can$_j$'a [çalış-mağ$_{i/*j}$]-a söz ver-di.
A.NOM C.-DAT work-mAK-DAT promise-PAST.3SG
'Ali promised Can to work.'

b. Ali$_i$ Can$_j$'a [ev-de kal-mağ$_{*i/j}$]-a izin ver-di.
A.NOM C.-DAT home-LOC stay-mAK-DAT allow-PAST.3SG
'Ali allowed Can to stay at home.'

A different tradition emphasizing the role of semantics and that is at first sight more promising involves exploiting thematic relations, specifically theta-role hierarchies, to account for controller selection (e.g. Jackendoff, 1972). For instance, Chierchia (1983, p.25) proposed the hierarchy in (16), where in the case of a violation the identity of the controller has to be stipulated as above:

(16) Theme>Source>Goal>...>Θ[10]

Observe that the sentences in (15) force such a stipulation as noted by both Erguvanlı-Taylan (1990) and Farkas (1988) (for their English counterparts), as this hierarchy fails to provide the correct selection. The claim is that *Ali* bears the SOURCE role and *Can* bears the GOAL role in both cases and (16) predicts the wrong controller for (15b). The premise of this argument is incorrect I think, because there is evidence that the infinitival complements of verbs like *force* and *persuade* correspond to the GOAL phrase of (15a) as

[10]According to Chierchia's formulation (p.25) an individual can be selected as a Θ-argument of a verb α iff it does not bear any θ-role to α. This relation is required to handle raising constructions.

they can be directly replaced by simple directional PPs expressing goal or result of action (Larson, 1991, p.125) as in (17):

(17) a. John forced Mary into the corner/into leaving.

b. John persuaded Mary into filling out the complaint.

Larson points out that there is in fact a correspondence between the NP of *promise* (e.g. *Can*) in (15a) and the infinitival complement of *persuade/force* and vice versa (p.106). Therefore, *Can* in (15a) and the infinitive in (15b) bear the GOAL role and the infinitive in (15a) and *Can* in (15b) bear the THEME role. Note that even in this revised formulation the hierarchy in (16) is still problematic because although it correctly selects the THEME as the controller in (15b), now it cannot select the SOURCE as the controller in (15a) and a stipulation is inevitable.

Erguvanlı-Taylan (1990, p.49) observes that when the syntactic conditions are met, the semantics of the matrix verb will play the role of determining the controller rather than thematic relations/hierarchies or structural relations like case or c-command. This, in fact, is the shared intuition among many researchers (e.g. Chierchia, 1983; Dowty, 1985; Farkas, 1988; Sag & Pollard, 1991; Van Valin & LaPolla, 1997; Jackendoff & Culicover, 2003) in that OC verbs do not have minimal pairs, i.e. we do not find two verbs with roughly the same meaning but different control behaviour (McCawley, 1988; Jackendoff & Culicover, 2003). Therefore, rather then assigning arbitrary, and thus non-explanatory, features or markedness values to lexical items, an account describing the uniform behaviour of, say, *persuade-* vs *promise*-type verbs, i.e. that such-and-such verbs pattern alike, would be more desirable. To put it differently, an adequate theory, as Farkas (1988, p.32) points out, should predict that because a certain argument of *persuade* or *convince* is realized as the direct object, the verbs exhibit o-control and likewise a certain argument of *promise* or *try* is realized as the subject making them s-control verbs.

So, what does controller selection follow from? The common answer that is given by those who sometimes classify the verbs roughly as in (18) into three basic classes is that it follows from lexical semantics[11]. In more technical terms, it is merely an entailment associated with the matrix verb[12]. As Jacobson (1992b, p.272) indicates, the verb *want*,

[11]I have provided the classification from Sag & Pollard (1991, p.65) but any other will equally do for our purposes.

[12]Jackendoff & Culicover (2003) formulate their proposal in terms of Conceptual Structure, Van Valin & LaPolla (1997) make use of thematic macro-roles and yet Farkas (1988) introduces the RESP(onsibility) relation which is also adopted by Erguvanlı-Taylan (1990). I will not go

for instance, entails something about its subject, namely that in his/her "*want*-world", the individual has the property denoted by the VP[13]. By a similar token, to know what, say, *persuade* means is, among other things, to know which of the two NPs in the matrix clause will be the controller and this fact follows trivially once the basic meaning of the verb is taken into account. Hence, the contrast between *promise* and *persuade*, when approached from this angle, is an inevitable fact.

(18) a. INFLUENCE-type: This class comprises verbs like *persuade* and *force* where one participant, who will be the controller, is influenced by another participant to perform or not to perform an action. The causative, e.g. *compel* and jussive verbs, e.g. *order*, all belong to this class.

b. COMMITMENT-type: These verbs typically involve a participant who commits to perform or not to perform an action. The verbs like *try*, *intend*, *refuse* and *promise* all belong to this class. Sometimes the verbs involve a third argument, the COMMISSEE, to whom the commitment is made, as in the case of *promise*.

c. ORIENTATION-type: Verbs like *want*, *desire* and *hope* encoding mental orientations like desires and expectations belong to this class. The EXPERIENCER who experiences the orientation denoted by the complement will be the controller.

The entailment related to control is of course not the only one that follows from this point of view. An intransitive verb like *çalış-* 'try', for example, entails that its subject is capable of acting intentionally so that his/her action brings about the situation denoted by the VP complement. By a similar token, a ditransitive control verb like *zorla-* 'force' entails that its subject is capable of forming intentions to act and as a result of his/her actions the object NP comes to intend to bring about the situation denoted by the VP complement (Dowty, 1985, pp.299-300). Additionally, observe that in each case it follows that the controller must denote a rational entity capable of volitional behaviour.

Notice that formulating things this way, as Jacobson (1992b) indicates, requires no additional apparatus in the grammar and no stipulation either. And, in fact, extra principles seem to be needed to prevent such entailments from being associated with particular lexical items. What we are endorsing here is the idea that complex syntactic formulations can

into the specific details of each proposal beyond the common point above, except for noting that each of them emphasizes the lexical-semantic nature of the matrix predicate. The so-called Lexical Entailment Theory of Control is particularly articulated in Chierchia (1984b) and Dowty (1985) (Jacobson, 1992b, p.269).

[13]We will elaborate more on this point in Chapter 4, at the end of our discussions about partial control.

actually be replaced by independently motivated facts about lexical items. Once this is observed, for instance in the case of control, then nothing more is needed. It is, therefore, the null hypothesis (p.273).

The syntactic and semantic status of the complement also constitute a part of this hypothesis whereby it is claimed that the complement is a VP in syntax and a property in semantics, and the OC verbs establish a relation between an individual and a property (p.272). In Chapter 4, we will see that in fact much more is associated with OC verbs—in particular their entailments with respect to the complement VPs—and these further observations will enable us to stick to this null hypothesis against novel alternatives.

CHAPTER 3

COMBINATORY CATEGORIAL GRAMMAR (CCG)

Having laid the background necessary for the rest of our discussion, I would like to digress for the moment to provide a brief description of the framework that I endorse. Combinatory Categorial Grammar (CCG, Steedman (2000); Steedman & Baldridge (2007)) is a fully-lexicalized grammar formalism where each lexical item is composed of a triple $\Phi := \Sigma : \Lambda$, namely a phonological form associated with what is called a syntactic and a semantic *type*:

(19) *like* := $\mathbf{(S\backslash NP)/NP} : \lambda x \lambda y.like' \, xy$

The general notation $\mathbf{A/B}$ defines a *function* which combines to its right with an element of category $\mathbf{B}$, i.e. it is a function from domain $\mathbf{B}$ into domain $\mathbf{A}$ (the corresponding leftward-combining functor is written as $\mathbf{A\backslash B}$), where $\mathbf{A}$ and $\mathbf{B}$ may also be functor categories. The syntactic category $\mathbf{(S\backslash NP)/NP}$, therefore, identifies the verb *like* as a function with two arguments whose type and directionality can also be read off from this lexical entry. Finally, the colon operator associates a logical form with the entire syntactic category:

(20) $\overbrace{like}^{string} \underbrace{:=}_{\substack{string\\type\\descriptor}} \overbrace{\overbrace{\mathbf{(S\backslash NP)/NP}}^{syn.type} : \overbrace{\underbrace{\lambda x \lambda y.}_{correspondence} \underbrace{like'}_{\substack{logical\\form}} \underbrace{(e,(e,t))}_{sem.type} xy}^{interpretation}}^{category}$

The function categories and combinatory rules (see below) are "modalized", as indicated via subscripts on slashes: $\star$, $\diamond$, $\times$, $\cdot$. These modalities and their interrelation (see Figure 3.1 below) allow us to have lexical control over the applicability of combinatory rules, i.e. to have functors as input to only a subset of the available rules. This property makes

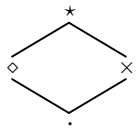

Figure 3.1. CCG type hierarchy for slash modalities

combinatory rules universal while leaving cross-linguistic variation to the lexicon, which, in turn, makes the grammars fully lexicalized (Steedman & Baldridge, 2007, p.8).

This hierarchy is intended to represent that the $\star$ modality is the supertype of all other modalities and allows only the most basic applicative rules to apply. The $\cdot$ modality, on the other hand, is the most permissive one and allows all rules to apply. In general, given a rule R of modality m, R can be applicable only to the categories bearing a modality m', where m' is either the same modality as m, or is a subtype of m. Hence, for example, if the rule has $\diamond$ modality then a functor having either $\diamond$ or $\cdot$ modalities can be an input; the incompatible $\times$ or the supertype $\star$ modalities are not allowed.

3.1 Combinatory Rules in CCG

The simplest operation in CCG, *function application*, can be written as follows:

(21) $\mathbf{X}/_{\star}\mathbf{Y}: f\ \mathbf{Y}: a \Rightarrow \mathbf{X}: fa$ (>)

$\mathbf{X}\backslash_{\star}\mathbf{Y}: f\ \mathbf{Y}: a \Rightarrow \mathbf{X}: fa$ (<)

The universal type hierarchy in Figure 3.1, together with the rules in (21), can give rise to the following derivation as $\cdot$ is a subtype of $\star$ (the $\cdot$ modality on the slashes is usually omitted):

(22)
$$\dfrac{\dfrac{\begin{array}{ccc} \textit{John} & \textit{likes} & \textit{books.} \\ \overline{\mathbf{NP}} & \overline{(\mathbf{S}\backslash\mathbf{NP})/\mathbf{NP}} & \overline{\mathbf{NP}} \\ : \textit{john}' & : \lambda x\lambda y.\textit{likes}'\ xy & : \textit{books}' \end{array}}{\dfrac{\mathbf{S}\backslash\mathbf{NP}}{: \lambda y.\textit{likes}'\ \textit{books}'\ y}>}}{\dfrac{\mathbf{S}}{: \textit{likes}'\ \textit{books}'\ \textit{john}'}<}$$

The compositional interpretation associated with **S** is left-associative, i.e. it is equivalent to $(\textit{likes}'\ \textit{books}')\textit{john}'$. In the most general case, the predicate-argument structure $P'\,x_n x_{n-1} \ldots x_1$ of a predicate P is equivalent to $(((P'\,x_n)x_{n-1})\ldots x_1)$, where x_{i-1} immediately dominates x_i.

In addition to function application, CCG allows functions to *compose* harmonically (23) as well as in a crossing fashion (24), the latter having a re-ordering effect:

(23) $\mathbf{X}/_{\diamond}\mathbf{Y}$: f $\mathbf{Y}/_{\diamond}\mathbf{Z}$: $g \Rightarrow \mathbf{X}/_{\diamond}\mathbf{Z} : \lambda x.f(gx)$ ($>\mathbf{B}$)
$\mathbf{X}\backslash_{\diamond}\mathbf{Y}$: f $\mathbf{Y}\backslash_{\diamond}\mathbf{Z}$: $g \Rightarrow \mathbf{X}\backslash_{\diamond}\mathbf{Z} : \lambda x.f(gx)$ ($<\mathbf{B}$)

(24) $\mathbf{X}/_{\times}\mathbf{Y}$: f $\mathbf{Y}\backslash_{\times}\mathbf{Z}$: $g \Rightarrow \mathbf{X}\backslash_{\times}\mathbf{Z} : \lambda x.f(gx)$ ($>\mathbf{B}_{\times}$)
$\mathbf{Y}/_{\times}\mathbf{Z}$: f $\mathbf{X}\backslash_{\times}\mathbf{Y}$: $g \Rightarrow \mathbf{X}/_{\times}\mathbf{Z} : \lambda x.f(gx)$ ($<\mathbf{B}_{\times}$)

CCG also includes type-raising rules which turn arguments into functions over functions-over-such-arguments (Steedman & Baldridge, 2007, p.13) (the rule is limited to argument categories, e.g. **NP, VP, AP**, **PP** and **S**, in order to ensure decidability):

(25) $\mathbf{X}$: $a \Rightarrow \mathbf{T}/(\mathbf{T}\backslash\mathbf{X})$: $\lambda f.f\,a$ ($>\mathbf{T}$)
$\mathbf{X}$: $a \Rightarrow \mathbf{T}\backslash(\mathbf{T}/\mathbf{X})$: $\lambda f.f\,a$ ($>\mathbf{T}$)

As seen in the derivation below, forward composition together with type-raising enables us to coordinate like categories that are not traditionally assumed to be constituents, without appealing to phonologically empty elements (the conjunction category *and*:=$(\mathbf{X}\backslash_{\star}\mathbf{X})/_{\star}\mathbf{X}$ allows like categories to combine *only* by application due to its slash feature):

(26)

John	*likes*	*and*	*Mary*	*hates*	*books.*
NP	**((S\NP)/NP)**	**(X*X)/*X**	**NP**	**((S\NP)/NP)**	**NP**
S/(S\NP) (>T)			**S/(S\NP)** (>T)		
S/NP (>B)			**S/NP** (>B)		
		(S/NP)*(S/NP) (>)			
(S/NP) (<)					
S (>)					

3.2 CCG Principles

Among the several fundamental principles of CCG, I will cite the two most relevant here:

(27) a. *The Principle of Lexical Head Government* (PLHG)
Both bounded and unbounded syntactic dependencies are specified by the lexical syntactic type of their head.

b. *The Principle of Categorial Type Transparency* (PCTT)
For a given language, the semantic type of the interpretation together with language-specific directionality parameter settings uniquely determines the syntactic type of a category.
In the pair (σ, μ) of a lexical category, the syntactic type σ and the semantic type μ are co-determined: if μ is of type $\mathcal{T}\sigma$, and σ is of type $\mathcal{T}^{-1}\mu$, where $\mathcal{T}$ is a relation with inverse. If σ is a syntactic functor $\alpha\backslash\beta$ or α/β, then its semantic type is $\mathcal{T}\sigma = \mathcal{T}\beta \mapsto \mathcal{T}\alpha$. (Steedman, 2000)

Observe that we have been assuming PLHG right from the start by relegating the control behaviour to the matrix verb, rather than structural relations or syntactic operations. This will be much clearer below when I present the lexical entries of some control verbs. The second principle, PCTT, ensures that the bare VP complements of control verbs map to properties via $\mathcal{T}$ $(\mathbf{VP{=}S}_{\text{inf}}\backslash\mathbf{NP}) = \mathcal{T}(\mathbf{NP}) \mapsto \mathcal{T}(\mathbf{S}) = (\text{e} \mapsto \text{t})$, a point we will return to later when we discuss the semantic status of the complement VP.

3.3 Binding and Control in CCG

CCG replaces the notion of c-command by LF-command which is defined over the syntacticised LF via the relation "dominates". Consequently, the locus of binding principles is LF as well:

(28) *LF-command*: a node α in a logical form Λ LF-commands a node β in Λ if the node immediately dominating α dominates β and α does not dominate β.
(Steedman & Baldridge, 2007, p.15)

One convention is to refer to terms like $pro'\,x$, which translate bound pronouns, and $ana'\,x$, which translate anaphors at the predicate argument structure, as "pro-terms" where x is identical to some other node in the logical form. Now we can define Condition C of the Binding Theory as follows:

(29) *Condition C*: No node except the argument in a pro-term may be LF-commanded by itself. (Steedman & Baldridge, 2007, p.15)

It follows that Condition C as defined in (29) will rule out a sentence like **He$_i$ likes John$_i$* since it gives rise to the illegal predicate-argument structure $like'\,john'\,(pro'\,john')$. Condition A will follow from Condition C and the assumption that reflexivization is lexicalized, as we shall see shortly.

Turning now to the categories of control verbs, note that since control is a lexical property and our grammar is lexicalized, the lexical entry of verbs should encode domain of locality via their syntactic type, and the dependency relation between the controller and the controllee via LF:

(30) *want* := $\mathbf{(S\backslash NP)/(S_{inf}\backslash NP)}$: $\lambda P \lambda x.want'\,(P(ana'\,x))x$

The LF of *want* encodes x as the term for the controller and $(ana'\,x)$ as the term for the controllee, where ana' provides the bound argument interpretation for $ana'\,x$, i.e. $ana'\,x$ represents an anaphor coindexed with x, the interpretation of the matrix subject. Hence, the lexical entry of the control verb establishes the dependency itself rather than leaving it to the Binding Theory or a control module in the grammar (Steedman, 2000, p.67). Observe that the controller LF-commands the controllee.

To illustrate the effect of this formulation, compare the LFs of the entries for the verbs *promise* and *persuade* in (31) that encode the necessary dependencies essentially stemming from lexical semantics as we have discussed previously, which, in turn, yield the desired interpretations in (32) and (33) :

(31) *promise* := $\mathbf{((S\backslash NP)/(S_{inf}\backslash NP))/NP}$: $\lambda y \lambda P \lambda x.promise'\,(P(ana'\,x))yx$
persuade := $\mathbf{((S\backslash NP)/(S_{inf}\backslash NP))/NP}$: $\lambda y \lambda P \lambda x.persuade'\,(P(ana'\,y))yx$

(32)
$$\dfrac{\dfrac{\dfrac{\dfrac{\textit{John}}{\mathbf{NP}} \quad \dfrac{\dfrac{\textit{promised}}{\mathbf{(S\backslash NP)/(S_{inf}\backslash NP)/NP}} \quad \dfrac{\textit{Mary}}{\mathbf{NP}}}{\mathbf{(S\backslash NP)/(S_{inf}\backslash NP)}}\,{>}}{\mathbf{S\backslash NP}}\,{>}}{\mathbf{S} : promise'(go'\,(ana'\,john'))mary'\,john'}\,{<}$$

(33)
$$\dfrac{\dfrac{\dfrac{\dfrac{\textit{John}}{\mathbf{NP}} \quad \dfrac{\dfrac{\textit{persuaded}}{\mathbf{(S\backslash NP)/(S_{inf}\backslash NP)/NP}} \quad \dfrac{\textit{Mary}}{\mathbf{NP}}}{\mathbf{(S\backslash NP)/(S_{inf}\backslash NP)}}\,{>}}{\mathbf{S\backslash NP}}\,{>}}{\mathbf{S} : persuade'\,(go'\,(ana'\,mary'))mary'\,john'}\,{<}$$

I will conclude this section by presenting how reflexivization is handled in CCG. As we shall see in Section 4.2.2 of the next chapter, this point will be extremely important to maintain that control complements are VPs which map to properties. Recall that Condition A requires the binder of an anaphor to be locally available. This is captured in

CCG by assuming that reflexivization is lexicalized (Steedman & Baldridge, 2007, following Reinhart & Reuland (1991, 1993)). This is to say that anaphors like *himself* are type-raised as in (34) and will apply to *lexical* verbal categories only. Notice that the lexical treatment of anaphor binding defines its domain of locality as the domain of the verbal category itself and thereby imposes Condition A without further stipulation.

(34) *himself*:= $\mathbf{(S\backslash NP_{3sm})\backslash_{LEX}((S\backslash NP_{3sm})/NP)}$: $\lambda P\lambda y.P(ana'\ y)y$

This gives rise to the following derivation:

(35)
$$\dfrac{\dfrac{\textit{John}}{\underset{:\ john'}{\mathbf{NP}}} \quad \dfrac{\dfrac{\textit{washes}}{\underset{:\ \lambda x\lambda y.wash'\ xy}{\mathbf{(S\backslash NP_{3sm})/NP}}} \quad \dfrac{\dfrac{\textit{himself}.}{\underset{:\ \lambda P\lambda y.P(ana'\ y)y}{\mathbf{(S\backslash NP_{3sm})\backslash_{LEX}((S\backslash NP_{3sm})/NP)}}}{}}{\underset{:\ \lambda y.wash'\ (ana'\ y)y}{\mathbf{(S\backslash NP_{3sm})}}}<}{\underset{:\ wash'\ (ana'\ john')john'}{\mathbf{S}}}>$$

Once reflexivization is handled this way, we can eliminate the syntactic PRO that is needed, among other things, to be coindexed with a reflexive in the complement as in example (36), where it is bound by the complement's subject:

(36) John promised Mary to wash himself/*herself.

Note that the derivation of this sentence will parallel (35) once we revise the category of *promise* as in (37) and add the agreement markers that we have suppressed before, which gives rise to the derivation in (38):

(37) *promise*:= $\mathbf{((S\backslash NP_{agr})/(S_{inf}\backslash NP_{agr}))/NP}$: $\lambda y\lambda P\lambda x.promise'\ (P(ana'\ x))yx$

(38)
$$\dfrac{\dfrac{\textit{John}}{\underset{:\ john'}{\mathbf{NP}}} \quad \dfrac{\dfrac{\textit{promised}}{\underset{:\ \lambda y\lambda P\lambda x.promise'\ (P(ana'\ x))yx}{\mathbf{((S\backslash NP_{agr})/(S_{inf}\backslash NP_{agr}))/NP}}} \quad \dfrac{\textit{Mary}}{\underset{:\ mary'}{\mathbf{NP}}}}{\underset{:\ \lambda P\lambda x.promise'\ (P(ana'\ x))mary'x}{\mathbf{(S\backslash NP_{agr})/(S_{inf}\backslash NP_{agr})}}}> \quad \dfrac{\textit{to wash himself}.}{\underset{:\ \lambda y.wash'\ (ana'\ y)y}{\mathbf{(S\backslash NP_{3sm})}}}}{\underset{:\ \lambda x.promise'\ (wash'\ (ana'\ (ana'\ x))(ana'\ x))mary'\ x}{\mathbf{S\backslash NP_{3sm}}}}>}{\underset{:\ promise'(wash'\ (ana'\ (ana'\ john'))(ana'\ john'))mary'\ john'}{\mathbf{S}}}<$$

Since the category of *promise* forces agreement between the matrix subject and the agreement feature coming from the VP, it would thereby disallow a derivation involving the reflexive *herself*. Besides agreement, note that the local binding of the reflexive is passed up to the domain of the matrix verb and hence the binding principles are not violated.

CHAPTER 4

ON THE RELATION BETWEEN A CONTROL VERB AND ITS COMPLEMENT

The preceding sections have tried to illustrate that verb semantics, as has been suggested by many researchers, is the place to look at in determining the controller and that an adequate theory cannot dispense with the lexical semantics of the verb. Thus, we expect to see this robust characteristic carry over to other constructions involving an OC verb.

In the following section, without departing from the canonical infinitival complements, I will discuss what is called "controller shift" in the literature first noted by Hust & Brame (1976). This problem is related to the general problem of controller selection but will reveal important facts as to the relation between a control verb and its complement. The rest of the chapter will cover further observations about the nature of the complement, in particular those related to its interpretation and its semantic and syntactic status. The overall aim is to show that the relevance of the inherent meaning of the matrix verb is not restricted to controller selection.

4.1 Controller-shift?

By way of example, consider (39a,b) from Sag & Pollard (1991, p.82) where the controller is argued to shift from the canonical controller to the other NP in the matrix clause:

(39) a. Kim$_i$ promised Sandy$_j$ to be allowed to attend$_j$ the party.

b. Dana$_i$ asked Pat$_j$ to be allowed to attend$_i$ the party.

c. Kim$_i$ promised Sandy$_j$ to be hassled$_i$ by the police.

d. Dana$_i$ asked Pat$_j$ to be hassled$_j$ by the police.

The alleged shifting presents a challenge to the account endorsed here because the controller shifts to the argument that is not selected by the above semantic criteria—at

least at first sight. It is also unexpected from a structuralist point of view because, as Larson (1991) observes, structural relations appear to be the same. Note, in passing, that passivization is neither sufficent nor necessary to switch the reference of the controller, as (39c,d) reveal, since the preferred readings (as indicated by the indices) are in accord with our semantic principles. Moreover, the very same verbs, as Farkas (1988) points out, can even exhibit ambiguous controller choice:

(40) a. The mother promised the children to stay up late.

b. The pupil asked the teacher to leave early.

The examples with *ask* in (39) and (40), similar to the examples with *öner-* 'propose' in (10), intuitively involve different senses of the verb so can be said not to pose a challenge at all. To illustrate this point, consider the below pair (41a,b) from Ladusaw & Dowty (1988, pp.71-72):

(41) a. Mary asked John$_i$ to shave$_i$ himself.

b. John$_i$ asked his mother to go$_i$ to the movies.

These sentences apparently involve a *request-for-action* and a *request-for-permission*, respectively. Thus, it is no surprise that the controller is the object *John* in the first sentence while it is the subject *John* in the second since the verbs realize their controllers in the respective positions.

There are two further points about the interpretation of these sentences where the alleged shift occurs. One is that they become more acceptable for some people if the matrix verb is also passivized as in (42):

(42) Sandy was promised to be allowed to attend the party.

The other point is that while the unmarked cases are all acceptable to everyone, the examples involving controller-shift seem to exhibit variation both cross-dialectically and cross-linguistically (Farkas, 1988). Yet, especially given proper context, say, where a relation of authority is implied (Farkas, 1988; Landau, 2003), the above examples, even when the matrix verb is not passivized, are acceptable. This shows that the phenomenon has to do with the interpretation of the complement rather than its syntactic status (Růžička, 1983; Farkas, 1988; Sag & Pollard, 1991).

Besides, again given proper context, passivized complements can give rise to various controller assignments. Take the below example for instance:

(43) John$_i$ promised Mary$_j$ to be allowed to go$_{i/j/i+j}$ to the party.

As Sag & Pollard (1991, p.85) note, the fact that the context can make either of the matrix NPs the controller in the very example that is argued to counterexemplify the semantically-based controller selection forces one to be reluctant to abandon what we have said so far straightforwardly.

Indeed, a closer look at verb semantics reveals that the possibility of controller shift arises when there is a mismatch between the complement and the semantic requirement of the matrix verb. More precisely, complements like *to be allowed to X*, *to be able to X*, etc. denote states rather than actions selected by these OC verbs. When there is such a mismatch between the requirement of the matrix verb and the semantic interpretation of the VP, the VP is taken to be *coerced* to an interpretation compatible with the matrix verb (Sag & Pollard, 1991; Jackendoff & Culicover, 2003). For example, if, as in (39a), *Kim* promises *Sandy* to be allowed to attend the party then *Kim* promises to perform the action that causes *Sandy* to be allowed to attend the party and it is, as the meaning of *promise* requires, *Kim* who will undertake the necessary action. Hence we get the interpretation "to cause Sandy to be allowed to go". This is also the case for causative and jussive object control verbs' complements[14].

As a matter of fact, when there is no question as to whether there can be a shift of controller or not, such coercions appear to be found all over the place as long as the interpretation of the VP does not satisfy the requirement of the matrix verb. *Promise*- and *persuade*-type verbs all involve an action or inaction on the part of the controller and when the verb is provided with (non-intentional) states their interpretation is also coerced (Sag & Pollard, 1991; Jackendoff & Culicover, 2003):

(44) a. Ali Can'a [tam zamanında orada ol-mağ]-a/ [nazik olmağ]-a/ ?[uza-mağ]-a/ ?[Ahmet-i andır-mağ]-a söz ver-di.
A.NOM C.-DAT on time there be-mAK-DAT polite be-mAK-DAT grow tall-mAK-DAT A.-ACC resemble-DAT promise-PAST.3SG
'Ali promised Can to be there on time/to be polite/to grow tall/to resemble Ahmet.'

[14]Larson (1991) predicts controller shift to be only possible for *promise*-type verbs which he relates to the verb's being a double-object verb. Apparently, however, one can have controller-shift with other type of verbs, too.

b. Ali Can'ı [tam zamanında orada ol-mağ]-a/ [nazik
A.NOM C.-ACC on time there be-mAK-DAT polite

olmağ]-a/ ?[uza-mağ]-a/ ?[Ahmet-i andır-mağ]-a
be-mAK-DAT grow tall-mAK-DAT A.-ACC resemble-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can to be there on time/to be polite/to grow tall/to resemble Ahmet.'

What we understand from (44a) is a situation where *Ali* promises to act in a certain way *to be there*, or *to be polite*, or even *to be/to grow taller* or *to resemble Ahmet*. The same interpretations are at work with the object controller *Can* in (44b). Therefore, we either have a promise or a persuasion to act in a certain way to bring about the state denoted by the VP complement. This persistency towards a certain kind of complement can be traced back to Lasnik & Fiengo (1974) who claimed that the infinitival (and gerundive) complements of semantic type action selected by their head will have unique control where the controller is the one being the actor of that action regardless of its syntactic position.

As the reader might have noted, I have not cited the third set of verbs, namely the *want*-type experiencer verbs, as instigating some sort of coercion because apparently they are not as choosy as the other two classes as (45) show (compare the state vs. action interpretation in (45a) and (45b), respectively):

(45) a. Ali [uza-mağ]-ı/ [Ahmet'i andır-mağ]-ı/ [nazik
A.NOM grow tall-mAK-ACC A.-ACC resemble-mAK-ACC polite

ol-mağ]-ı/ [sev-il-meğ]-i iste-di.
be-mAK-ACC love-PASS-mAK-ACC want-PAST.3SG
'Ali wanted to grow tall/to resemble Ahmet/to be polite/to be loved.'

b. Ali ?[uza-mağ]-a/ ?[Ahmet'i andır-mağ]-a/ [nazik
A.NOM grow tall-mAK-DAT A.-ACC resemble-mAK-DAT polite

ol-mağ]-a/ [sev-il-meğ]-e çalış-tı.
be-mAK-DAT love-PASS-mAK-DAT try-PAST.3SG
'Ali tried to grow tall/to resemble Ahmet/to be polite/to be loved.'

Evidently, the verbs of this set, alongside eventive complements with which they imply a mental disposition towards an action, also allow stative complements where one experiences a 'psychological' state or process which is different from executing it. The difference in the type of complements, then, can be taken as a motivation to refrain from collapsing the two types of s-control verbs.

4.2 The Nature of the VP Complement

4.2.1 A note on the tense of the complement

As we have been talking about the nature of the complements of OC verbs, I believe that two other dimensions are worth mentioning: (i) their temporal properties, and (ii) their semantic and syntactic status. The former revolves around a much-cited claim dating back to Bresnan (1972), and also endorsed in Stowell (1982), to the effect that the complements of OC verbs, in addition to their being eventive, are also future-oriented. More precisely, the time frame of the infinitival is unrealized with respect to the tense of the matrix verb and therefore the complement describes, in Bresnan's (1972) words, "something hypothetical or unrealized":

(46) a. Jenny remembered to bring the wine.

b. Jim tried to lock the door. (Stowell, 1982, p.563)

The claim is that *Jenny* in (46a) has not yet brought the wine when she remembers to do so, and likewise in (46b) *Jim* doesn't succeed in locking the door when he tries to do so. Stowell argues that infinitival control complements have a uniform, internally determined tense on a par with tensed clauses. In his analysis, this internally determined tense correlation between infinitivals and tensed clauses are accounted for by positing a COMP position inside the clause for both of the constructions where either complementizers or tense operators appear.

Yet, alongside these examples, there are several verbs which behave like OC verbs but do not imply such a future-oriented reading for their complements. For instance, compare the verbs *becer-* 'manage' and *umut et-* 'hope' in the examples below:

(47) a. Ali [İstanbul'a git-meğ]-i becer-di.
A.NOM Istanbul-DAT go-mAK-ACC manage-PAST.3SG
'Ali managed to go to Istanbul.'

b. Ali [İstanbul'a git-meğ]-i umut et-ti.
A.NOM Istanbul-DAT go-mAK-ACC hope-PAST.3SG
'Ali hoped to go to Istanbul.

The verb *becer-* 'manage' belongs to a class of verbs called *implicative* verbs (Karttunen, 1971) which imply a belief in the truth of the complement. Specifically, implicative verbs entail their complement as evidenced by the fact that if we negate the matrix verb we also negate the complement:

(48) Ali didn't manage to go to Istanbul. → Ali didn't go to Istanbul.

Non-implicatives like *umut et-* 'hope', on the other hand, do not commit the speaker to any knowledge or belief regarding the truth of the complement[15]. There are several tests to distinguish implicatives from non-implicatives, as outlined in Karttunen's paper, but here I will cite only one difference that is immediately relevant to the present discussion, namely the one involving tense specifications. Karttunen shows that the tense of an implicative verb has to agree with that of its complements as revealed in the following examples (p.346):

(49) a. *John remembered to lock his door tomorrow.

b. *John managed to solve the problem next week.

What these examples show is that the complement of an implicative cannot contain a time adverbial that conflicts with the tense of the matrix verb. However, non-implicatives do not require that their complement be in the same tense as themselves (50):

(50) a. John hoped to solve the problem next week.

b. John wanted to arrive day after tomorrow.

As Karttunen indicates, the important point here is that the past tense in the matrix clause does not exclude having a future adverbial and, consequently, a future-oriented interpretation in the complement. Hence, we can have OC verbs whose complements are not future-oriented contra Stowell's attempt to derive this claim from the structure of infinitives.

[15]The truth of an affirmative main verb implies the truth of the complement both for implicatives and factives. However, negating the matrix verb makes them part ways (*ibid.* p.342). The above distinction is enough for the purposes of this chapter. We will need to revise it when we consider "world-creating" predicates in the next chapter.

It seems that a better answer to the different interpretations of the complements is revealed when we consider what exactly the matrix verb's inherent meaning contributes. Verbs like *manage*, *remember* or *forget* lack one property that verbs like *hope*, *promise* or *want* have, namely *intention*, as remarked in Jackendoff & Culicover (2003). And as intention is by its very nature future-oriented (p.550), the infinitives that are complements to such verbs must be interpreted as having some sort of future meaning. What this shows is that being future-oriented is not something internally determined by an infinitive—which would be at odds with the examples in (49) anyway—but something that follows from the lexical semantics of the matrix verb.

Before concluding, let me note that the difference between implicatives and non-implicatives is not absolute, and there are verbs which can be interpreted in either way (Karttunen, 1971, p.355). The verb *çalış-* 'try', for example, does not commit one to the truth of its complement, i.e. (51a) does not imply (51b), and hence behaves like a non-implicative. Yet, it does not tolerate a time adverbial that is different from its tense and behaves like an implicative (51c,d). Note that this last property essentially makes (46b) irrelevant to Stowell's argument:

(51) a. Ali soru-yu çöz-meğ-e çalış-tı.
A.NOM question-ACC solve-mAK-DAT try-PAST.3SG
'Ali tried to solve the problem.'

b. Ali soru-yu çöz-dü.
A.NOM question-ACC solve-PAST.3SG
'Ali solved the problem.'

c. *Ali soru-yu yarın çöz-meğ-e çalış-tı.
A.NOM question-ACC tomorrow solve-mAK-DAT try-PAST.3SG
'*Ali tried to solve the question tomorrow.'

d. *Ali soru-yu dün çöz-meğ-e çalış-acak.
A.NOM question-ACC yesterday solve-mAK-DAT try-FUT.3SG
'*Ali will try to solve the question yesterday.'

4.2.2 A note on the syntactic and semantic status of the complement

The other point I would like to discuss involves the syntactic and semantic status of the controlled constituent, in particular, whether it is clausal and propositional, as much of the

mainstream generative grammar assumes, e.g. Chomsky (1981), or whether it is a bare VP and denotes a property, as claimed by Montague (1974), Chierchia (1984a), Dowty (1985), Jacobson (1992a) and the present account. In fact, as far as the syntax and semantics go, all four possibilites have been entertained. Hence, we also encounter the other two options, namely that the complement is clausal in syntax but denotes a non-propositional predicate, e.g. Williams (1980), and the opposite one, namely that the complement is a VP but denotes a proposition, e.g. Bach & Partee (1980), Klein & Sag (1985), Sag & Pollard (1991).

In this section, I will confine myself to present one robust and well-known piece of evidence in favor of the property-analysis of the complement, which is a bare VP in syntax, and will discuss one apparent counterargument to this claim. In fact, as Chierchia (1984a, p.30) notes, the argument is quite simple but shows how the property theory makes some correct predictions while the propositional one either makes false predictions or makes no predictions at all. By way of illustration, consider the inference patterns in (52) and their logical form in the property analysis in (53) and in the propositional analysis in (54):

(52) a. John tried whatever Mary tried.
Mary tried to jog.
John tried to jog.

b. John promised Mary whatever Jack promised Mary.
Jack promised to Mary to marry her.
John promised to Mary to marry her.

(53) a. $\forall x[try'(x)(mary') \rightarrow try'(x)(john')]$ Property analysis
$try'(jog')(mary')$
$try'(jog')(john')$

b. $\forall x[promise'(x)(mary')(jack') \rightarrow promise'(x)(mary')(john')]$
$promise'(marry'her')(mary')(jack')$
$promise'(marry'her')(mary')(john')$

(54) a. $\forall x[try'(x)(mary') \rightarrow try'(x)(john')]$ Propositional analysis
$try'(jog'(mary'))(mary')$
$??try'(jog'(mary'))(john')$

b. $\forall$x[promise$'$(x)(mary$'$)(jack$'$) $\rightarrow$ promise$'$(x)(mary$'$)(john$'$)]
promise$'$((marry$'$(her$'$))jack$'$)(mary$'$)(jack$'$)

??promise$'$((marry$'$(her$'$))jack$'$)(mary$'$)(john$'$)

As Chierchia indicates, it is clear that these simple inferences, which are straightforward under a property account of the complement, turn into a mystery in the propositional view. Evidently, this can be taken as a very strong argument for the property theory.

A further but related support for the property theory comes from the observation that the complements of OC verbs cannot be strictly interpreted under VP-ellipsis, i.e. we can only have the interpretation where the elliptical VP in the second conjunct is controlled by *Mary* in (55):

(55) John$_i$ tried to finish$_i$ the work, and Mary$_j$ did too.

$\neq$ Mary$_j$ tried to finish$_i$ the work.

Note that the propositional theory, postulating similar logical forms as above, this time fails to account for the fact that only the sloppy reading is possible, which follows directly in the property theory.

I would like to conclude our discussion about the properties of the complement by presenting a well-known counterargument to the claims that I have reviewed so far. The argument comes from the binding of reflexives that may occur in the complement. Observe that, apart from theory internal considerations, like EPP (i.e. that clauses have subjects) or Theta-criterion which motivated its postulation, PRO serves to account for anaphoric binding when there is a reflexive in the complement (56):

(56) John$_i$ promised Mary [PRO$_i$ to wash himself$_i$/*herself].

In the above examples, I deliberately gave the logical form in the way Chierchia presented them and not in the CCG-style so as to better illustrate the counterargument to this approach. Note that since there is no local subject available neither in syntax nor in semantics, property-view of the complements faces a serious challenge from binding theory. However, as the reader will recall from our discussions in the preceding chapter, CCG mediates this dependency not by the complement's syntax or semantics—which is problematic as we have seen—but by the head of the construction, i.e. the matrix verb, and via the lexical treatment of anaphor binding. Given that binding, like control, is captured at the level of logical form, the entry of the matrix verb will both disallow a binding theory violation and force agreement between the controller and the reflexive pronoun in the complement.

4.3 Partial Control?

In recent years there has been a reviving interest in the control phenomena and, in particular, the typology of control. In this section, I would like to take up a much discussed member of this typology, namely partial control (PC), because the claims surrounding PC have direct relevance to the nature of the controlled constituent. In fact, PC is claimed to present a challenge both for a movement analysis of control and for the property-theory of the complement.

Recall that PC is said to occur when there is a collective predicate (or a collectivizer) in the complement whose subject is thereby plural and thus cannot be satisfied exhaustively by the singular subject of the matrix verb alone (57)[16]:

(57) a. Ali$_i$ [buluş-mağ$_{i+}$]-ı ist-iyor.
A.NOM meet-mAK-ACC want-PROG.3SG
'Ali wants to meet.'

b. Ali$_i$ [yarınki parti-ye birlikte git-meğ$_{i+}$]-i
A.NOM tomorrow's party-DAT together go-mAK-ACC

reddet-ti.
refuse-PAST.3SG
'Ali refused to go together to the tomorrow's party.'

PC can be traced back to Williams (1980) who claimed that both PC and split-control readings are possible only with NOC verbs like *want* (58). In fact, Williams claims that NOC verbs contrast with OC verbs like *try* or *promise* with which such readings are impossible[17]:

(58) a. I want to meet at 6.

b. *I will try to meet at 6.

c. *John$_i$ promised Mary$_j$ to leave$_{i+j}$ together. (Williams, 1980, p.218)

[16]The verb *reddet-* 'refuse' is ambiguous in that it also behaves as a negative-implicative verb as in *Ali refused to drink wine* which implies that *Ali didn't drink wine*. The example in (57b) is meant to have a non-implicative sense.

[17]Williams' theory forces him to classify *want* as an NOC verb (p.215). It is not hard to find counter-examples to the claims above as we shall see shortly. Let me note here that the *promise* sentence is not ungrammatical in fact, neither in English (Landau, 1999, p.43) nor in Turkish as I have indicated earlier.

Landau (1999) works the details of PC thoroughly and notes that it is both widespread and characteristic of contexts where we observe OC. Moreover, he shows that PC verbs behave exactly like canonical OC verbs with respect to the criteria in (59a-d) except for the fact that they allow a PC interpretation when possible (p.49):

(59) a. Arbitrary control is impossible.

b. Long-distance control is impossible.

c. Strict reading of PRO is impossible.

d. *De re* reading of PRO is impossible.

e. Partial control is possible.

Faced with the observations above, Landau suggests a rethinking of the phenomena and divides the set of OC verbs into two as *exhaustive* control (EC) and *partial* control (PC) verbs, the former of which does not allow a PC reading. This new division is motivated by the fact that the above examples present evidence for a non-strict identity between the controller and the controllee. This non-strict identity, according to Landau, implies (60) which presents a challange both to the property-theory and to a movement account of OC (p.41):

(60) Complement control cannot (always) be reduced to predication or variable binding, i.e. PRO exists, and it is not always a λ-variable.

The crucial point to note here is that PRO is *not* an argument of the matrix predicate, and the matrix argument, being singular, is properly contained in the set denoted by PRO. Landau indicates that for a Hornsteinian movement-based account the problem is that the DP-movement chain has to have non-identical copies since the lower DP is plural as it checks the theta-role of the embedded collective predicate and the higher DP is singular as it checks the theta-role of a non-collective predicate. As for the property-theory of infinitives, he claims that the PC constructions are simply uninterpretable.

The other subclass, exhaustive control verbs, consists of implicatives like *becer-* 'manage', aspectual verbs like *başla-* 'begin', and modals like *zor-un-da kal-* 'compulsion-NC-LOC be.left' which do not allow a PC reading[18]:

[18]Oded (2006, pp.110-111) claims that aspectuals and modals, similar to their English counterparts, do not allow PC reading in Turkish. Also, when analyzing PC with modals she conflates *zorunda (ol-)* and *zorunda kal-* into 'have to'. As Göksel & Kerslake (2005, p.353-354) indicates,

(61) a. *Ali [9.30'da buluş-mağ]-ı becer-di.
A.NOM 9.30-LOC meet-mAK-ACC manage-PAST.3SG
'*Ali managed to meet at 9.30.'

b. *Ali [9.30'da buluşmağ]-a başla-dı.
A.NOM 9.30-LOC meet-mAK-ACC begin-PAST.3SG
'*Ali began to meet at 9.30.'

c. *Ali [9.30'da buluşmak] zor-un-da kal-dı.
A.NOM 9.30-LOC meet-mAK compulsion-NC-LOC be.left-PAST.3SG
'*Ali had to meet at 9.30.'

In a way reminiscent of Stowell (1982), Landau suggests that the PC interpretation is due to the PC complements' bearing tense in their syntax. EC complements, on the other hand, lack a tense specification notwithstanding the fact that these complements look the same and what changes across constructions is the matrix verb. A different suggestion came from Wurmbrand (1998, 2002, 2003, as cited in Barrie & Pittman (2004)) who analysed EC verbs as restructuring verbs forming essentially a single complex predicate with the structure in (62):

(62) *John $[_{VP}$ managed $[_{VP}$ to meet at 9.30]].

Since there is only one subject position (note the absence of PRO) *John* is the sole candidate for the subject of the complex predicate and hence the ungrammaticality follows. It also follows that verbs not allowing PC have monoclausal structure and are not classified as control verbs for Wurmbrand in the first place, whatever the mechanism is used to find an antecedent for PRO. Landau, on the other hand, having observed that the embedded PRO inherits its φ-features—but not its semantic number—from the controller, proposes

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however, *zor-un-da (ol-)* 'compulsion-NC-LOC (be)' is used to indicate non-actualized obligation while *zor-un-da kal-* 'compulsion-NC-LOC be.left', which I have used in (61c), is used to signal actualized obligations. It seems to me to be this difference in meaning that underlies the contrast in acceptability of Oded's example (ex45, p.111, glosses and judgements are mine):

(i) Kaya [saat 6'da buluş-mak] ?zor-un-da-ydı/
K.NOM hour 6-LOC meet-mAK compulsion-NC-LOC-P.COP.3SG/
*zor-un-da kal-dı.
compulsion-NC-LOC be.left-PAST.3SG
'Kaya had to meet at 6 o'clock.'

that the semantic plurality is acquired through context[19] (pp.74-76). The examples in (63) illustrate the first part of his claim (pp.62-63):

(63) a. *John told Mary that he preferred to meet each other at 6 today.

b. *John knew that Mary hoped to become members of the new club.

c. *John told Mary that he wanted to accept themselves with more maturity.

Landau provides further examples from different languages to support the claim that PRO in PC constructions is semantically plural but syntactically singular. His overall analysis is essentially an explanation for this observation. Yet, what I aim to show in the rest of this section is that such a division is not necessary and more importantly we can still stick to the property-view of the complements.

Observe that we have a PC interpretation only when the matrix verb and the complement possess distinct time specifications. To put it differently, since the verbs in (61) force the same tense for their complements, when, say, *Ali* manages to meet he also has to execute the collective action which in turn, not surprisingly, renders the sentence ungrammatical. Therefore, the ungrammaticality is a result of the requirement that the matrix verb and its complement should agree in tense.

On the other hand, note that PC is more felicitious with verbs that involve intention (recall the inherent future oriented meaning that intentions have, compare (64a,b) and (65a,b)) with complements containing voluntary actions (compare (66a) and (66b)) (Jackendoff & Culicover, 2003; Barrie & Pittman, 2004):

(64) a. Ali Can'a [9.30'da buluşmağ]-a söz ver-di.
A.NOM C.-DAT 9.30-LOC meet-mAK-DAT promise-PAST.3SG
'Ali promised Can to meet at 9.30.'

b. Ali Can'ı [9.30'da buluşmağ]-a ikna et-ti.
A.NOM C.-ACC 9.30-LOC meet-mAK-DAT persuade-PAST.3SG
'Ali persuaded Can to meet at 9.30.'

[19]According to Oded (2006), PC reading with implicatives as in (61) is not bad, but to be felicitous it still necessitates prior discourse that allows an object pronoun like *onunla* 'with him/her' to be dropped. Oded further claims that a "real" PC verb like *iste-* 'want' does not necessarily require prior discourse knowledge in this way (p.109). Note, however, that if one needs to recover the reference of the subject of the embedded predicate, discourse knowledge is always necessary, a crucial part of Landau's formulation which Oded fails to note. In general, she finds the verbs in the EC class either not compatible with a PC reading or not completely OK without an object pronoun. Observe that adding an object pronoun would destroy the PC environment.

(65) a. ?Ali Can'a [9.30'da buluşmağ]-ı emret-ti.
A.NOM C.-DAT 9.30-LOC meet-mAK-ACC order-PAST.3SG
'Ali ordered Can to meet at 9.30.'

b. ?Ali Can'a [9.30'da buluşmağ]-ı yasakla-dı.
A.NOM C.-DAT 9.30-LOC meet-mAK-ACC forbid-PAST.3SG
'Ali forbade Can to meet at 9.30.'

(66) a. Ali Can'a [parti-ye beraber katıl-mağ]-a
A.NOM C.-DAT party-DAT together attend-mAK-DAT

söz ver-di.
promise-PAST.3SG
'Ali promised Can to attend the party together.'

b. ??Ali Can'ı [soru-yu beraber bil-meğ]-e
A.NOM C.-ACC question-ACC together know-mAK-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can to know (the answer to) the question together.'

Examples like (57), (64a,b) and (66a) permit a future-oriented interpretation where the controller holds the intention of carrying out the collective action—which is different from its execution—with others whose exact reference is likely to be recovered from the discourse. In fact, when one incorporates discourse knowledge there is no need for the complement to denote an inherently collective action at all so long as we can deduce that the action is to be carried out collectively. Consider (67) when uttered in the context of (68):

(67) Ali persuaded Can to buy the flat.

(68) Ali and Can, two housemates, were thinking of buying a new flat together. One day, Ali talked to Can about a new place which he liked a lot. Can was reluctant at first because the price was so high but eventually...

The example in (67) is of course not an instance of PC in the sense of Landau (1999) as the complement does not contain a collective predicate or a collectivizer. My point is that the complement can be interpreted collectively if put in an appropriate context.

Now that we have seen that a viable alternative lies in the semantics of verbs, let me return to the challenge that PC is argued to pose against the property-view of complements. Recall that since there is non-strict identity between the matrix subject and the "understood subject" of the complement, Landau claimed that these constructions are uninterpretable under a property-analysis of the complements.

Apparently, a premise of this argument is the definition of controller as the antecedent of an embedded PRO. More precisely, it seems that the terms partial and split control are due to the assumption that there is a PRO occupying the subject position of the embedded predicate denoting a joint action whose plurality is incompatible with the singular—but otherwise canonically determined—subject or object controller. Note, however, that we are not trying to find an antecedent for PRO in the first place, whose existence is problematic as we have seen in the previous section. What we are trying to find in control constructions is the argument of the complex predicate formed by the OC verb and its complement. And this is exactly what the property-theory claims: due to the inherent meaning of the matrix verb the individual stands in a special relation to the VP and this relation is determined by and covaries with the OC verb. Consequently, the entailment will vary accordingly as well, and there is no claim to the effect that the individual actually has the property (Jacobson, 1992b). In more technical terms, the verb *want*, for instance, denotes a function from intensions to intensions and when it combines with a VP, it modifies the VP's intension and turns it into a modified intension. This modified intension will in turn look at a 'world' and pick out the class of things that '*want*+VP' in that 'world'. Hence, the verbs in fact behave like VP-modifiers semantically (Dowty et al., 1981). On the other hand, when the matrix verb is *manage*, for instance, then there is an additional entailment in that the individual actually carries out the action denoted by the VP[20]. Otherwise, the verbs in the PC class are oblivious to the collectiveness of their complement. They allow a PC reading because of the temporal relation they have with their complements.

The careful reader might have noticed that the welcome result of the argument from PC is that it urges us to revise our definition of control which we have given at the very beginning. So, it is not exactly correct to say that in *John wants to go*, *John* is both the *wanter* and the *goer*. Rather, *John* is the *want-goer*. Only if there is an additional entailment as in the EC-class of verbs, will *John* be the *goer* as well.

[20]Similarly, *to walk slowly* entails *walking* but *to allegedly walk* does not (Dowty et al., 1981).

To sum up, the crucial point to note about the PC constructions is that once a collective predicate or a collectivizer like *beraber* 'together' in the complement is present, the availability of a PC interpretation depends on the matrix verb. Observing this fact saves us from postulating distinct structures for infinitives while deriving their interpretation from the matrix verb in each case. Finally, the counterargument to the property-view of complements only arises if we assume an embedded PRO, which we do not[21].

4.4 Interim summary

Before we continue our discussion, I would like to summarize the points we have made so far:

(69) a. Control verbs are divided into a handful of semantically coherent classes whose members behave consistently cross-linguistically. However, it does not follow that a verb in some class behaves as a control verb in any given language for the language in question may not have the formal requirement, i.e. an infinitive, as in Balkan languages (see, Asudeh, 2005).

b. The problem of controller choice, whenever it arises, is a lexical problem, by which I mean that it is lexically determined and part of what it means to know what, say, *promise* and *persuade* mean is to know which argument is appointed as the controller among the available candidates in the matrix clause.

c. Whenever the complement of a control verb contains a collective predicate or a collectivizer, or an action that can be carried out by more than one person, the availability of the so-called "partial" or "split" control depends solely on the matrix verb. These cases, therefore, need not be derived from some special structure for infinitives as in Landau (1999). The lexical meaning of the verb is enough for these cases as well and the controller is still uniquely determined.

d. A control verb inherently encodes more than one action/state, e.g. *try* encodes a trying event and something that is tried, and this action/state is manifested as the VP complement in the canonical frame of the verb.

e. The verb qualifies the action/state denoted by the VP and together they form some sort of a complex predicate into which a matrix argument is projected. This

[21]For further arguments against the postulation of PRO, see Culicover & Wilkins (1986), Culicover & Jackendoff (2006).

is reflected in the semantic type of a verb like *try*, for instance, as it is a function from one-place predicates to one-place predicates.

f. There seems to be an intimate relation between the complement and the verb. In particular, the verb determines whether the complement is future-oriented, hypothetical or simultaneous relative to the matrix verb. Therefore, deriving the tense of the complement from the structure of infinitives is also unnecessary. This would also be in line with the view of infinitives formed with *-mAK* in Lewis (2000) where it is noted that they describe pure undefined action.

g. The matrix verb also determines whether the VP can denote actions or states, as in *want*, or whether it is restricted to actions only, as in *persuade* or *promise*. The observation here is that whenever the matrix verb can be interpreted as an action so can its complement even if the latter denotes a state in isolation (Noonan, 1985). The controller will then be the actor who carries out this action regardless of its syntactic position in the matrix clause (Lasnik & Fiengo, 1974).

h. The requirement just cited is a strict one. When the verbs which specifically require actions as complements are supplied by states, the complements are coerced into an action interpretation (Sag & Pollard, 1991). The extrapolated controller is determined as in the canonical cases.

i. Since the action/state denoted by the VP complement stems from the lexical meaning of the matrix verb, its form (in accord with the complement structures provided by the language) and interpretation are determined by the matrix verb as well. Moreover, in almost all cases these verbal complements are of a reduced form and are categorially defective in the sense of Hopper & Thompson (1984) as they denote "not a report of an action, but a wish, desire, command, or projection into the future" (p.731) and thereby depart from being a prototypical verb denoting an event.

All in all, we have observed that what the complement denotes is a constituent of what the matrix verb denotes and therefore the verb may impose certain restrictions on this argument (Farkas, 1992a, p.96). The more such restrictions are imposed the more dependent the complement is to the matrix verb. Hence, the availability of complement types will vary accordingly to reflect this degree of dependency. Note, however, that it is always an interaction of the individual verb and its complement that gives rise to an acceptable sentence. Therefore, even with otherwise closely related verbs, a complement type may not be applicable across-the-board as we shall see in the next chapter.

CHAPTER 5

NON-CANONICAL COMPLEMENTS

I would like to continue our discussion about control by focusing on data where the verbs take complements that are not infinitives. Our aim here is to see how non-canonical complementation works and whether there is a relation with the canonical control cases, in particular, with the matrix verb. We will first investigate the cases where the verbs occur with NPs and then go on to analyze the possible complements formed with the verbal nouns in Turkish other than the infinitives.

5.1 NP Complements

As noted by Dowty (1985) and Jacobson (1992a), and elaborated in detail by Pustejovsky (1991), (most) OC verbs take an NP argument where the sentence still entails an action towards the NP and the usual control behaviour holds. However, the alternation may not be automatic in each case:

(70) a. Ali bir kitap ist-iyor.
A.NOM one book.NOM want-PROG.3SG
'Ali wants a book.'

b. Ali kitab-a başla-dı.
A.NOM book-DAT begin-PAST.3SG
'Ali began the book.'

Pustejovsky, in his Generative Lexicon Theory (Pustejovsky, 1991, 1995), discusses such additional subcategorization frames with NPs and their interpretations for desiderative verbs like *want* and aspectuals like *begin* and *finish*. He suggests that these constructions involve instances of *type-coercion*: the NP in the complement is coerced to an event-type that is selected for by the matrix verb, where it would otherwise result in a type error

(Pustejovsky, 1991, p.425). Pustejovsky argues that there are default event interpretations specified in the *qualia structure*[22] of a given NP but further indicates that given proper context any interpretation is possible. In the default case for (70b), the relevant events would come from the *telic* role—reading—or the *agentive* role—writing—of the noun *book*. The important point is not what the relevant event is but only that there is *some* event involving the NP so that coercion can be applied (p.430).

Observe that the interpretation of these frames depends both on what the NP provides and whether that is compatible with what the matrix verb requires. For instance, the verb *unut-* 'forget' is polysemous in that it relates a mental attitude to an event or to a proposition, in which case it takes an indicative complement. Therefore, the sentence in (71) can mean either that *Ali* failed to, say, bring the book—the control reading with an event provided by the NP—or does not remember what the book was about:

(71) Ali kitab-ı unut-muş.
A.NOM book-ACC forget-mIş.3SG
'Ali forgot the book.'

Moreover, these additional frames are not restricted to transitive control verbs as evidenced by the examples below. Similar coerced interpretations can be obtained with the object-control verbs, like *tavsiye et-* 'recommend', *yasakla-* 'forbid', *izin ver-* 'allow' and *ikna et-* 'persuade'[23], or ditransitive subject-control verbs, like *söz ver-* 'promise' and *teklif et-* 'offer':

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[22]The qualia structure, much like the argument structure of a verb, comprises the following 4 relations characterizing the semantics of nominals:

- Formal Role: what x is, what distinguishes x within a larger domain.
- Constitutive Role: what x is made of, its relation with its parts.
- Telic Role: function or purpose of x, if there is one.
- Agentive Role: how x came into being, the factors involved in its origins.

(Pustejovsky, 1991)

Associated with such lexical information, nouns are elevated from being passive arguments to active elements which, combined with the argument structure of the verb, gives rise to a richer notion of compositionality (Pustejovsky, 1991, p.427).

[23]Recall Larson's (1991) observation that infinitival complements of *persuade* or *force* can be directly replaced by simple directional PPs expressing goal or result of action. It seems that the acceptability of these examples lies in the fact that they are marked by the dative in Turkish which can be used for the same function, and the unacceptability of **John persuaded Mary a book* can be explained by the lack of such a marker.

(72) a. Ali Can'a Pamuk'un son kitab-ın-ı
A.NOM C.-DAT P.-GEN last book-POSS.3SG-ACC

tavsiye et-ti
recommend-PAST.3SG
'Ali recommended Can the latest book of Pamuk.'

b. Ali Can'a Pamuk'un son kitab-ın-ı
A.NOM C.-DAT P.-GEN last book-POSS.3SG-ACC

yasakla-dı.
forbid-PAST.3SG
'Ali forbade Can the latest book of Pamuk.'

c. Ali Can'a yolculuk için yalnızca bir kitab-a
A.NOM C.-DAT trip for only one book-DAT

izin ver-di.
allow-PAST.3SG
'Ali allowed Can only one book for the trip.'

d. Ali Can'ı yeni bir dene-ye ikna et-ti.
A.NOM C.-ACC new one experiment-DAT persuade-PAST.3SG
'Ali persuaded Can into a new experiment.'

e. Ali Can'a doğumgünü için bir kitap
A.NOM C.-DAT birthday for one book.NOM

söz(-ü) ver-di.
promise(-ACC)-PAST.3SG
'Ali promised Can a book for his birthday.'

f. Ali Can'a bir kitap teklif et-ti.
A.NOM C.-DAT one book.NOM offer-PAST.3SG
'Ali offered Can a book.'

Incidentally, notice that the complement NPs don't have to be simple, like *book*, but can also be themselves event-denoting, like *kavga* 'fight' and *istifa* 'resignation', which are straightforwardly compatible with the matrix verb:

(73) a. Ali Can'la kavga-ya başla-dı.
A.NOM C.-with fight-DAT begin-PAST.3SG
'Ali began the fight/quarrel with Can.'

b. Ali Can'ı istifa-ya zorla-dı.
A.NOM C.-ACC resignation-DAT force-PAST.3SG
'Ali forced Can into resignation.'

It seems, then, that many OC verbs allow NP complements where coercion (in the case of NPs not denoting an event) is successful to the extent that what the NP provides is compatible with the lexical meaning of the verb in question. This, in turn, seems to be directly related to world and/or discourse knowledge, and, in particular, how nominals are encoded in the lexicon, and can be said to lie outside of grammar proper. Yet, the interesting point is that this subcategorization is available for these verbs, and the control entailments do not change since the "invisible" infinitive is still subject to the same obligatory control relation.

Given an OC verb, a succesful coercion provides a way to relate this additional frame to the canonical interpretation of the construction. Of course, this does not answer the question as to *why* such a subcategorization exists alongside the canonical one; it only provides a way of interpretation which accounts for our intuitive understanding[24]. I do not have anything to add to Pustejovsky's formulation except for noting that the difference between non-control transitives, e.g. *read*, and ditransitives, e.g. *give*, and their control counterparts in terms of sitting comfortably in several frames might lie in the fact that the latter inherently involve more than one action/state, and that what we see as multiple subcategorizations, whether with NPs or with other type of complements, are in fact a reflection of the language-particular ways of expressing it.

5.2 Other complement types

Having seen the behaviour of OC verbs with infinitives and different kinds of NPs as complements, we will go on to see if the verbs can subcategorize for other verbal nouns. Recall that the complements of control verbs, except for implicatives, aspectuals and modals, are unrealized and/or future-oriented and therefore the suffixes *-DIK* (because of relative

[24]For a treatment in categorial grammar that borrows Generative Lexicon Theory to discuss these cases of polysemy, see Mineur & Buitelaar (1995).

tense) and *-(y)AcAK* (because of irrealis mood in the complement), both having an indicative meaning, are ruled out[25]. Even when the action *is* realized, an indicative complement is disallowed since the verb will have to agree with its complement in tense, as with implicatives. The remaining verbal nouns are the complements formed with the suffix *-mA*, to which I now turn.

5.2.1 *-mA* complements

The primary concern of this section is the behaviour of certain subject-control verbs which force a disjoint reading when their complements bear agreement suffixes or, in some languages, contain pronouns that refer to the matrix subject.

Before going into the details of this phenomenon, however, let me first mention some preliminary observations related to a difference between aspectuals and other subject-control verbs which is revealed when these verbs are supplied with a complement formed with the suffix *-mA*.

5.2.1.1 A difference between aspectuals and other subject-control verbs:

Notice the contrast between (74a,b) and (74c) below where the seemingly same complement gives rise to different readings with different matrix verbs:

(74) a. Araştırma-m-a/okuma-m-a/konuşma-m-a başla-dı-m.
investigation/reading/speech-POSS.1SG-DAT begin-PAST-1SG
'I began my investigation/research/speech.'

b. Kitab-ım-a dön-dü-m ve okuma-m-a
book-POSS.1SG-DAT return-PAST.1SG and reading-POSS.1SG

devam et-ti-m.
continue-PAST-1SG
'I returned to my book and continued (my) reading.'
(similary for *bitir-* 'finish')

c. *Kitab-ı oku-ma-m-a çalış-tı-m.
kitap-ACC read-mA-POSS.1SG-DAT try-PAST-1SG

[25] As a matter of fact, there are some exceptions to this claim where the complement can be formed with the indicative *-(y)AcAK*. I will return to these cases below.

(similarly for *iste-* 'want', *arzu et-* 'desire' and *becer-* 'manage'. Let me note that (74c) illustrates the primary topic of this section that I alluded to above.)

It seems that the reason why (74a) and (74b) are grammatical lies in the fact that some *-mA* complements have become lexicalized as ordinary nouns as many verbal nouns with *-mA* can in fact do (Göksel & Kerslake, 2005, p.418). So, *araştırma*, *okuma* and *konuşma* in the examples above would have the English translations *investigation/research*, *reading* and *speech*, respectively, all of which are nouns. On the other hand, when the matrix verb is not an aspectual a different reading of the complement is forced, as in (74c). I will now return to the discussion as to why agreement is problematic in these latter cases.

5.3 Obviation in *-mA* complements

Obviative complements are those complements whose subject (indicated by agreement or by a pronoun) cannot refer to the matrix subject as exemplified in (75):

(75) a. *Ben$_i$ arkadaş-ım-ı koru-ma-m$_i$-ı
I.NOM friend-POSS.1SG-ACC protect-mA-POSS.1SG-ACC

arzu et-ti-m.
desire-PAST-1SG

b. *Pierre$_i$ veut qu'il$_{*i/j}$ parte.
P. wants that he leave.SUBJ (French, Farkas, 1992a, p.85)

What we observe here is that with certain subject-control verbs, agreement or a referring pronoun in the complement targeting the matrix subject is not acceptable. In the case of object-control verbs, on the other hand, the suffixes may freely refer to the NPs in the matrix clause or the discourse, a point we will return to below.

There have been basically two lines of thought to explain this phenomenon as described in, *inter alia*, Farkas (1992a) and Schlenker (2005). I will briefly mention them and then go on to discuss an alternative proposal by these two studies for the case of *-mA* complements in Turkish.

5.3.1 A pragmatic/functional account

Farkas points out that the pragmatic/functional approach to obviation would invoke maxims like "avoid pronoun" or "be as concise as possible", so that when there is an accidental coreference of the complement's subject with the matrix subject as in (75) we have

ungrammatical sentences. Therefore, one should be using the infinitives that are present in the inventory of the language as in (76):

(76) Ben$_i$ arkadaş-ım-ı koru-mağ$_i$-ı arzu et-ti-m.
I.NOM friend-POSS.1SG-ACC protect-mAK-ACC desire-PAST-1SG
'I desired to protect my friend.'

Yet, there are some verbs which take an indicative complement where agreement or a referring pronoun is possible (77) despite the fact that true infinitives are also available. Hence, infinitives do not always block the use of a finite complement:

(77) a. Ali$_i$ gid-eceğ-in$_{i/j}$-e/git-meğ$_i$-e
A.NOM go-AcAK-POSS.3SG-DAT/go-mAK-DAT

söz ver-di.
promise-PAST.3SG
'Ali promised that he will go/to go.'

b. Pierre$_i$ a promis qu'il$_{i/j}$ partira/de partir$_i$.
P. promised that he will leave/Prep. leave.INF

(French, Farkas, 1992a, p.86)

Having observed these, one can argue that obviation is relevant for subjunctives in Romance or for *-mA* complements in Turkish since obviation occurs in these complements only. Then again, these complements are not obviative when embedded under object-control verbs (78a). Indeed, in some cases the agreement suffix in the complement unambiguously refers to an NP in the matrix clause (78b). Moreover, they may also be acceptable in certain cases with subject-control verbs as (78c) shows:

(78) a. Ali$_i$ Can$_j$'ı çok çalış-ma-sın$_{i/j/k}$-a
A.NOM C.-ACC very much work-mA-POSS.3SG-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can that s/he should work very much.'

b. Ali$_i$ Can$_j$'a çok çalış-ma-sın$_j$-ı
A.NOM C.-DAT very much work-mA-POSS.3SG-ACC

yasakla-dı/emret-ti.
forbid/order-PAST.3SG
'Ali forbade/ordered Can that he work very much.'

c. Je regrette que je n'aie pas pu te voir/de
I regret that I not have.SUBJ been able to you see.INF/Prep.

ne pas avoir pu te voir.
not have.INF been able to you see.INF (French, Farkas, 1992a, p.85)

In light of these examples, the pragmatic/functional maxims reduce to the observation that obviation manifests itself only with subjunctive complements when they are embedded under subject-control verbs except for the cases like (78c)[26].

5.3.2 A structural account

A completely different proposal formulated in the GB literature, and especially in connection with Romance languages, tried to make the facts about obviation follow from the principles of Binding Theory (BT). In particular, the idea is to cover the cases of obviation by Principle B so that its effect parallels (79):

(79) *John$_i$ saw him$_i$. (Farkas, 1992a, p.87)

Note that for such an assimilation to work the obviative subjunctive clauses have to be analyzed as *not* constituting a binding domain. Consequently, the whole sentence will serve as the binding domain and hence the pronoun/agreement cannot refer to the matrix subject, as claimed by Principle B. To that end, one must find a property which distinguishes such complements from non-obviative subjunctives as well as indicatives.

It has been suggested (Picallo, 1984, 1985; Meireles & Raposo, 1983; Salamanca, 1981, as cited in Farkas (1992a) and recently revived in Landau (2004)) that the relevant characteristic of these complements is that their tense is dependent on the Tense feature of the immediately higher clause and the definition of a binding domain is sensitive to this dependency. The dependent tense is argued to extend the binding domain and obviation will ultimately be a violation of Principle B. The disjointness effect is, therefore, claimed to be reduced to the tense-dependency of the clause, a property that the obviative complements have but the non-obviatives lack.

[26]We will return to these cases shortly.

However, Farkas, following Suñer & Padilla-Rivera (1984) and Zaring (1985, chap. II), points out that neither tense dependency nor the more stronger *subsequent* tense restriction works because such restrictions hold for both the indicatives as in (80a), and for non-obviative subjunctives as in (80b):

(80) a. Marie$_i$ promet à Paul qu'elle$_i$ partira tôt.
M.$_i$ promises P. that she$_i$ will leave soon.

b. J'ai proposé au professeur que je fasse
I proposed to the professor that I perform.SUBJ

l'expérience moi-méme.
the experiment myself. (French, Farkas, 1992a, p.87)

Note that the fact that obviation cannot be accounted for by the dependent tense of complements is a welcome result in the light of the discussions we have made so far since we are deriving semantic dependencies like that of tense not from the structure of the complement but from the meaning of the matrix verb. Hence, as the examples above illustrate, we can observe such dependencies irrespective of obviation.

5.3.3 Further characteristics of obviation

There are further characteristics of obviation which resist purely structural solutions. The first one involves the degree of obviation which was discussed in Ruwet (1984, as cited in Farkas (1992a)). It was observed that the strength of obviation in French depends both on the semantics of the matrix verb and that of the obviative complement. Recall that we have cited some subject control verbs which may take non-obviative subjunctives ((78c),(80b)). The generalization that seems to be at work is the following: the lesser the degree of the agentivity of the shared argument the more acceptable the agreement/pronoun in the complement, as the examples in (81) illustrate:

(81) a. Je veux que je puisse partir.
I want that I can.SUBJ leave

b. Je veux que je sois autorisé à partir tôt.
I want that I be.SUBJ authorized Prep. leave early

(French, Farkas, 1992a, p.88)

Moreover, this type of complements, as we have noted above, is acceptable with object-control verbs despite the fact that there is tense-dependency here as well, an issue left unaccounted for by any approach relating obviation to dependent tense:

(82) a. Ali$_i$ Can$_j$'ı çok çalış-ma-sın$_{i/j/k}$-a
A.NOM C.-ACC very much work-mA-POSS.3SG-DAT

ikna et-ti.
persuade-PAST.3SG
'Ali persuaded Can that s/he should work very much.'

b. ?Marie a convaincu Paul$_i$ qu'il$_i$ s'en aille/de s'en aller.
M. has convinced P. that he$_i$ leave.SUBJ/Prep. leave.INF

(French, Farkas, 1992a, p.90)

The second challenge to a purely structural approach comes from Romanian which lacks true infinitives. On the other hand, the subjunctives in this language share semantic and morphological properties with their counterparts in other Romance languages yet they are *not* obviative:

(83) Ion$_i$ vrea [e$_{i/j}$ să plece].
Ion wants [pro$_{i/j}$ SUBJ leave]. (Farkas, 1992a, p.88)

As Farkas points out the Romanian subjunctives provide a robust challenge to any BT approach relying on tense because there is no independent motivation for treating (83) as different from the French example in (75b). Hence, we cannot generalize the alleged properties of some subjunctive complements to their counterparts in other languages. As it is perhaps clear from the above discussion, the crucial generalization that any syntactic/binding-theoretic approach would be missing is that the coreference is blocked precisely when an infinitive is available to express the same meaning (Schlenker, 2005, p.14).

Before we continue with an alternative proposal, let me summarize the points we have made so far:

(84) a. Obviatives are a subset of subjunctives in Romance and of *-mA* complements in Turkish.

b. Indicatives are not obviative, nor are all subjunctives.

c. There is a tendency for obviation to target the matrix subject as the subjunctive clause can bear an element coreferring with the matrix object. In general, various factors, e.g. lexical variation, passivizied complements, focus, come into play for obviation to yield its effect.

d. The tense properties of the complements do not distinguish obviatives from non-obviatives.

e. The relation is local like control since coreference is allowed if the referents are not in adjacent clauses as in (85):

(85) Marie$_i$ souhaite que Jeanne$_j$ veuille qu'elle$_{i/*j}$ parte.
M. wishes that J. want.SUBJ that she leave.SUBJ

(French, Farkas, 1992a, p.91)

5.3.4 Farkas' proposal

The alternative proposal that I will outline here, formulated by Farkas (1992a), in fact relates the ungrammaticality of a sentence like (86a) to the grammaticality of (86b):

(86) a. *Ben$_i$ git-me-m$_i$-i ist-iyor-um.
I.NOM go-mA-POSS.1SG-ACC want-PROG-1SG

b. Ben git-mek ist-iyor-um.
I.NOM go-mAK want-PROG-1SG
'I want to go.'

The underlying idea here is similar to the pragmatic explanation in that it favors the use of a complement over the other, but goes one step further in analyzing the interaction between the verb and the candidate complement types. Specifically, it ties the unacceptability of (86a) to the existence of true infinitives in the language. This is tantamount to saying that there is nothing intrinsically ill-formed about a sentence like (86a); all that happens is that the infinitive complement is preferred to express the desired reading (Schlenker, 2005). It follows that subjunctives are obviative only when an infinitive is also possible with which they could in principle alternate. Hence, this view predicts that when we do not have the infinitive there should be no obviation. Indeed, this is the case for Romanian, as we have seen in (83) above, which lacks true infinitives and therefore the subjunctives are non-obviative.

What we need to elaborate on here is what these different complement types encode. We will then argue that the existence of the infinitive blocks the use of the subjunctive in certain cases because of the fact that the semantic dependencies they encode can overlap in certain environments. Hence, we will be describing the phenomenon as a restriction on the use of a complement type rather than appealing to different structures for the complements or to the interpretation of pronominals they may contain.

The motivation behind this competition analysis can be more precisely formulated as follows:

(87) a. Given certain assumptions, a subjunctive form is expected in a certain environment E.

b. Yet, it is ungrammatical in E.

c. E is precisely the environment where the infinitive is available. In non-E environments infinitive is not morphologically available.

(Schlenker, 2005, p.10)

Thus, the two environments where we can find the subjunctive and the infinitive in fact overlap, an observation that we will develop in the next section.

5.3.4.1 Types of semantic dependencies

In this section, I will talk about several semantic dependencies that are imposed by the matrix verb on its verbal complement which are expressed by the choice of complement type. Farkas (1992a) argues that the following triple comprises the most relevant semantic dependencies for linguistic phenomena: (i) time dependency, (ii) subject dependency and (iii) world dependency which basically correlates with mood.

Time dependency, as we have seen, is always encoded by control verbs. One can talk of this dependency if the time reference of the complement is a direct consequence of the meaning of the matrix verb (Noonan, 1985).

The second type of dependency involves the cases where the complement's subject necessarily refers to one of the matrix arguments[27]. This is the case when control verbs like *çalış-* 'try', *başla-* 'begin' and *zorla-* 'force' take infinitive complements whose "missing"

[27]Farkas points out that the question of whether only "external" arguments are controllable is an important one but does not address the issue. As discussed in detail by Bozşahin & McConville (2005), however, we know that what can be controlled is either the syntactic subject or the semantic subject, which may not surface as the syntactic subject. Therefore, the subject dependency should be understood as referring to either case.

argument corefers with the matrix subject or object. Indeed, Farkas claims that languages employ the infinitive to indicate this kind of dependency. Sometimes, a language can mark this dependency exclusively with subject-control verbs while using the subjunctive complements for the object-control verbs. Hungarian is one example having this tendency. In Western Romance, on the other hand, the use of subjunctives with object-control verbs alongside infinitives is not ruled out.

Apparently the situation with control verbs in Turkish is a mixed one as well. Infinitives apply across-the-board by definition, while *-mA* complements are a possibility for some object-control verbs[28]. Additionally, as discussed in Erguvanlı-Taylan (1990), there are some verbs in Turkish, like *söyle-* 'tell', whose English counterparts take infinitives and behave as control verbs. Yet, they may only take *-mA* complements in Turkish and thus do not exhibit control (88):

(88) a. *Ben o-na erken kalk-mağ-ı söyle-di-m.
I.NOM s/he-DAT early get up-mAK-ACC tell-PAST-1SG

b. Ben o-na erken kalk-ma-sın-ı söyle-di-m.
I.NOM s/he-DAT early get up-mA-POSS.3SG-ACC tell-PAST-1SG
'I told him/her to get up early.' (Erguvanlı-Taylan, 1990, p.53)

The last type of dependency, which Farkas terms as world-dependency, is introduced by the so-called "world-creating" predicates (McCawley, 1981). These are usually divided into two classes according to the relation they have with their complements:

- Weak-intensional predicates: *believe*, *think*, *dream*, *imagine*, *say*, *claim*, *predict*, etc.
- Strong-intensional predicates: desideratives like *want*, directives like *ask*, *request*, and modals.

In the canonical case, this difference is reflected in the type of complement that the verbs take, an indicative/realis complement for the first class and a subjunctive/irrealis complement for the second. But what is the source of this underlying difference? To answer this question we have to digress for a moment to elaborate on the nature of this classification.

[28]Later, we will be specific about which verbs they are.

5.3.4.2 "World-creating" predicates

The classification that I will discuss in this section is needed to understand obviation. To that end, I would like to highlight the points that are taken to characterize complement-taking predicates in terms of the relations they have with their complements. By way of example, consider (89):

(89) a. John believes that [you have a brother].

b. John wants [to find a unicorn].

Traditionally, both of the complements in (89) are taken to be evaluated not in the actual world, but in "possible worlds" (McCawley, 1981) and the truth of the sentence will depend on the evaluations relative to these.

Following Giannakidou (1999, 2009), I will take *veridicality* as the determining factor of the contrast between the verb classes above. Simply put, the mood choice based on (non) veridicality adopts the traditional intuition about the realis/irrealis distinction but avoids its empirical problems by positing a divide between intensional verbs based on *truth inference*. But note that neither from the truth of *I believe that p* nor from that of *I want p* we can infer that *p* is true.

The proposal put forth by Giannakidou, therefore, posits a divide based on the availability of truth inference with respect to an *individual anchor*, i.e. whether at least one epistemic agent (the speaker or the subject of the main verb) is committed to the truth of the complement. The evaluation procedure anchored to an individual is motivated by the observation, both in the linguistic and philosophical traditions, that sentences are not true in isolation but always with respect to an individual (Giannakidou, 1999, p.385). The traditional division, then, is refined in the following formulation (Giannakidou, 2009, p.7):

(90) A propositional operator F is veridical iff from the truth of Fp we can infer that p is true according to some individual x.

According to (90) veridicality follows if the truth of Fp requires that p be true in *some* individual's epistemic model[29]. In our case, where embedding predicates are at issue, both the speaker and the attitude subject are relevant as opposed to an unembbedded sentence where only the speaker's model is taken into account. For instance, in (89a) the complement of *believe* will be evaluated in John's belief world and will come out as true

[29] An individual's epistemic model stands for his/her worldview and represents his/her epistemic status, what s/he believes and knows (Quer, 2001).

as long as John is committed to the truth of that proposition. By a similar token, this can be generalized to other weak-intensional predicates, i.e. epistemic, dream/fiction and assertive verbs, which are all veridical, where the complement is evaluated with respect to the bearer of the attitude. Hence, veridicality in these cases is warranted by truth relative to the individual that believes, dreams, says or knows (Giannakidou, 1999, p.390). If the verb was *know*, however, then the complement will hold in the speaker's model as well. Similarly, aspectual, implicative, factive and perception verbs are veridical and evaluated in the speaker's model.

If, on the other hand, the truth of Fp does not require that p be true in some such model, then F is said to be nonveridical. Nonveridicality, therefore, corresponds to a state of unknown, or yet unrealized, truth value. Observe that the notion of nonveridicality is important for us because it characterizes the meaning of functions that do not ensure truth, e.g. that of verbs like *want* or *order*. From the truth of (89b), for instance, one can infer nothing as to whether John actually finds or found a unicorn (Giannakidou, 2009, p.7). Yet, non-veridicality does not imply the falsity of the complement, either; it may or may not be true (Giannakidou, 1999, p.384).

The second class, namely strong-intensional predicates, is, therefore, non-veridical. As Giannakidou indicates, the speaker's model now includes worlds that represent future realizations of the actual world, i.e. future possibilities that may arise given one's current beliefs. In the case of *want*, for instance, the speaker's epistemic model includes both the desired and undesired alternatives. Observe that, this formulation presumes that *want*-type desire reports are evaluated in connection to epistemic alternatives, i.e. what one desires is connected with what one believes, a prevailing approach in the treatments of desire reports (e.g. McCawley (1981) and Stalnaker (1984), Asher (1987), Heim (1992) as cited in Giannakidou (1999, p.391)). So, in the case of *want* they are "those possibilities that the agent believes will be realized if he doesn't get what he wants" (Stalnaker, 1984, p.89). Therefore, the future is modelled as alternative realizations of the actual world according to the preferences of the matrix anchor (Quer, 2001): *wanting* something is preferring it to certain alternatives. In the case of orders or requests, the situation is similar except for the fact that the object of the matrix verb is responsible for the action in the complement (Farkas, 1992a, p.101).

The patterns discussed above with respect to which the two classes of verbs subcategorize are attested in many languages which signal mood choice. The realization of the subjunctive in European languages, in particular, can be realized in two different ways: either via verb morphology, as in Romance, or via an uninflected particle external to the verb

that is generally classified as a complementizer, as in Balkan languages and Greek (Giannakidou, 2009, p.2). With its inflected suffix *-mA* attached to the verb Turkish apparently belongs to the first group.

Let me indicate that the particular formulation above will not have a significant effect on the rest of our discussion[30]. The point that *does* have an effect is the fact that a language like Greek, for instance, where complementation is always finite, employs subjunctive complements with certain verbs that take an infinitive in Romance and English, hence the semantic relatedness of the two complement types.

To sum up, then, the most important consequence for world-dependency is its correlation with mood. The reason is that with respect to the lexical meaning of the matrix predicate, the complements will take different forms which indicate different flavors of modality: the first class of verbs are associated with indicative whereas the second class of verbs are associated with subjunctive complements modulo language-particular alternations. What is particularly important for our purposes is that desideratives and directives, which may behave as control verbs, can in principle subcategorize for a type of non-indicative complement, e.g. a subjunctive.

5.3.4.3 The blocking account

Farkas indicates that the 'blocking' account of obviation is to be understood as the term is used in lexical semantics and morphology. In these areas the term blocking is used to describe the situations where "the meaning, use, or very existence of a given word or expression is affected by the existence and range of a related and more basic or specific entry in the lexicon" (Horn, 1984, p.111 as cited in Farkas (1992a)). The present approach is the application of this idea in the realm of subcategorization.

Here the motivation for blocking relies on the competition between subjunctives and infinitives which is triggered by their semantic relatedness. As we have seen above, each complement type is used to mark some kind of semantic dependency, namely subject-dependency in the case of infinitives and world-dependency in the case of subjunctives which, in turn, is associated with non-indicative mood. The reason why infinitives tend to block the subjunctives is that the respective domains of the dependencies they encode often overlap, e.g. in the case of the complements with *try* or *want*. When such an overlap occurs

[30]There are many approaches to mood choice in the philosophical and linguistic literature, both traditional and modern, and although they might differ in terms of the premises they are based on, the verb classes and their subcategorization patterns are similar (see McCawley, 1981; Farkas, 1992b; Quer, 2001; Giannakidou, 2009), since when it comes to complementation the semantics of the embedding predicate is always emphasized. A comparison of these alternatives is beyond the scope of this study.

the infinitive, being the more specific, more basic complement type in the lexicon to mark subject-dependence, rules out the possible use of the subjunctive. Therefore, the reason why (91) is unacceptable is not because of a BT violation but because a more specific item in the inventory of the language is not used:

(91) *Ben git-me-m-i ist-iyor-um.
I.NOM go-mA-POSS.1SG-ACC want-PROG-1SG

The reason why an infinitive is more specific, on the other hand, is that it is formally less marked, i.e. it is more reduced, but semantically more specific compared to a subjunctive. It is therefore the basic form to mark subject-dependency. Additionally, it is also unspecified for tense and mood and, is, therefore, subsidiary to the matrix verb for the interpretation of these aspects as well.

A further point that relates to the specificity of the infinitive involves an important property of control constructions. Recall that one of the characteristics of obligatory control that distinguishes it from non-obligatory control is that the complements of the former can only be interpreted *de se* while those of the latter allow *de re* interpretations[31]. This difference directly comes into the picture when one considers the competition between the infinitive and the subjunctive because the former only allows a *de se* reading while the latter allows a *de re* reading (Schlenker, 2005, pp.15-16):

(92) a. Ali başkan seç-il-meğ-i umut ed-iyor.
A.NOM president choose-PASS-mAK-ACC hope-PROG.3SG
'Ali hopes to be elected president.'

[31]"The *de se/de re* contrast emerges in situations where a subject of an attitude verb is misinformed about his/her identity. A typical example involves a war hero who suffers from amnesia and remembers nothing of his wartime experiences. Suppose this person (hereafter, "the unfortunate") sees a TV program describing his own exploits, and is impressed with the courage exhibited by that person, who he does not know is himself. Consider now the following statements ((i),(ii)) ((ii) and (iii) are Landau's (24b,c), which are taken from Hornstein (1999)):

(i) The unfortunate expects that he will get a medal.

(ii) The unfortunate believes that getting a medal would be boring.

(iii) The unfortunate expects to get a medal.

Under the above scenario, (i) and (ii) are true but (iii) is false. This is because the former can be satisfied by *de re* beliefs about a certain individual (denoted by "the unfortunate"), but the latter can only be satisfied by *de se* beliefs about the "self". Important to our point is the fact that OC (iii) and NOC (ii) contrast with respect to this test." (Landau, 1999, p.48).

b. Ali başkan seç-il-me-sin-i
A.NOM president choose-PASS-mA-POSS.3SG-ACC

umut ed-iyor.
hope-PROG.3SG
'Ali hopes that he is elected president.'

Apparently, to obtain the desired reading in the canonical control cases, languages possessing both infinitives and subjunctives opt for using the former as the more specific complement type marking subject dependence over the latter which may give rise to other readings as well. Admittedly, the specificity argument does not answer exactly why this tendency exists despite the well-founded arguments favoring a competition-based analysis. I leave it for future research to determine the reasons underlying this behaviour which might be couched in pragmatically-oriented principles (as in Schlenker (2005)).

The last point that I would like to add to our discussion of obviation is the reason why it is most relevant for subject-control verbs. Farkas (1992a, p.106) conjectures that subject-orientation can be a result of the cross-linguistic tendency to mark coreference with subject more explicitly than with a non-subject[32]. Correspondingly, this can also be viewed as a tendency to overtly mark switch-reference by agreement and not to mark it when one tracks the same reference. This last point was noted in the discussion of *-mAK* vs. *-mA* in Turkish by Erguvanlı-Taylan (1990, p.58), where it is suggested that they are variants of the same morpheme marking same-reference and switch-reference, respectively.

In fact, the idea that a language can employ a formal device to signal switch-reference is a plausible one in view of the fact that such markings are found with directive verbs like *ask*, *command*, *request*, imperatives, and desideratives like *want* and *hope* when one's desires involve other people (Farkas, 2003; Stiebels, 2007). Note that the common point of all these environments is that they are directed to an individual other than the matrix subject.

5.4 Further corroboration to the subjunctive analysis of *-mA* complements

The last aspect of the subjunctive analysis of *-mA* complements that I would like to present has to do with an observation related to their interaction with negative polarity

[32]It seems that this claim should be restricted to accusative languages. Thanks to Cem Bozşahin for pointing this out to me.

items (NPIs). It has been noted that negation in the matrix clause can license an NPI inside an infinitive/subjunctive complement but not an indicative one (Progovac, 1993, as cited in Landau (2004)). In light of this observation, the below examples provide further corroboration to the present claim and also to the claim that subjunctives and infinitives are different from indicatives:

(93) a. Ali'ye hiç kimse-yle konuş-mağ-ı yasakla-ma-dı-m.
A.-DAT any body-with talk-mAK-ACC forbid-mA-PAST-1SG
'I did not forbid Ali to talk to anybody.'
[¬∃x ((person(x) ∧ I-forbid-Ali-talk-to(x))]

b. Ali'ye hiç kimse-yle konuş-ma-sın-ı
A.-DAT any body-with talk-mA-POSS.3SG-ACC

yasakla-ma-dı-m.
forbid-NEG-PAST-1SG
'I did not forbid Ali that he talk to anybody.'
[¬∃x ((person(x) ∧ I-forbid-Ali-talk-to(x))]

c. Ali'nin hiç kimse-yle konuş-acağ-ın-a
A.-GEN any body-with talk-AcAK-POSS.3SG-DAT

inan-mı-yor-um.
believe-NEG-PROG-1SG
'I do not believe that Ali would talk to anybody.'
[∀x (person(x) → I-not-believe-Ali-talk-to(x))]

Before concluding this section let me note that similar remarks with respect to the suffix *-mA* and its subjunctive status have been made in the literature before. Haig & Słodowicz (2004) and Słodowicz (2007) have suggested that the disjoint reference effect we observed is reminiscent of the obviation effect in Romance, though they did not elaborate on the issue. Özsoy (1987, p.87) also noted the disjointness effect for verbs like *iste-* 'want', *bık-* 'be tired'. Lastly, Kornfilt (2003, as cited in Słodowicz (2007)) has labeled these complements as subjunctives due to the similarities cited above.

Yet another related point was made in Erguvanlı-Taylan (1990), where it is observed that manipulative verbs like *izin ver-* 'allow, give permission' and *yasakla-* 'forbid' are singled out from the rest of the object-control verbs in accepting non-control *-mA* complements (94b):

(94) a. Tolga san-a sinema-ya git-meğ-e
T.NOM you-DAT cinema-DAT go-mAK-DAT

izin ver-di.
permission give-PAST.3SG
'Tolga gave you permission to go to the cinema.'

b. Tolga sen-in sinema-ya git-me-n-e
T.NOM you-GEN cinema-DAT go-mA-POSS.2SG-DAT

izin ver-di.
permission give-PAST.3SG
'Tolga gave permission to you to go to the cinema.'
Lit. 'Tolga gave permission to your going to the cinema.'

(Erguvanlı-Taylan, 1990, p.57)

c. *Can'ı ara-ma-m-ı becer-di-m.
C.-ACC call-mA-POSS.1SG-ACC manage-PAST-1SG

d. *Tolga sen-i Can'ı ara-ma-n-a
T.NOM you-ACC C.-ACC call-mA-POSS.2SG-DAT

mecbur et-ti.
compel-PAST.3SG

Erguvanlı-Taylan indicates that the reason why these verbs also allow non-control complements remains "a curious observation" (p.57). Observe that the subjunctive analysis of *-mA* complements accounts for this difference. Since these complements have modal connotations and are non-factive they are not compatible with control verbs implying their complements, whether they are subject control verbs as in (94c) or object-control verbs as in (94d).

5.5 A note on indicative complements

Up to now we have cited a handful of semantic dependencies which may hold between the matrix verb and its complement. We have observed that due to such dependencies, which are triggered by control verbs to varying degrees, the verbal complements are usually

of a reduced form in the sense of Hopper & Thompson (1984) since they depart from being prototypical V(erb)s. However, we have also noted that with subject control verbs like *söz ver-* 'promise' or *um-/umut et-* 'hope' the use of an indicative is not ruled out (95):

(95) a. Bu haftasonu İstanbul'a gid-eceğ-im-e
this weekend Istanbul-DAT go-AcAK-POSS.1SG-DAT

söz ver-di-m.
promise-PAST-1SG
'I promised that I will go to Istanbul this weekend.'

b. Bu haftasonu İstanbul'a gid-eceğ-im-i
this weekend Istanbul-DAT go-AcAK-POSS.1SG-ACC

um-uyor-um.
hope-PROG-1SG
'I hope that I will go to Istanbul this weekend.'

Moreover, the subjunctive *-mA* complements are not acceptable in these cases as (96) reveals:

(96) a. *Bu haftasonu İstanbul'a git-me-m-e
this weekend Istanbul-DAT go-mA-POSS.1SG-DAT

söz ver-di-m.
promise-PAST-1SG

b. *Bu haftasonu İstanbul'a git-me-m-i
this weekend Istanbul-DAT go-mA-POSS.1SG-DAT

um-uyor-um.
hope-PROG-1SG

The reason behind the acceptability of the indicatives here seems to lie in the fact that these verbs imply a high degree of certainty, knowledge or belief on the part of the speaker about the event in the complement[33]. The meaning of *um-* 'hope', for instance, implies

[33]This is why Erguvanlı-Taylan (1990), following Givón (1990, p.119), puts these verbs in the cognitive/utterance verbs class since they encode some act of speaking, or a mental attitude such as knowledge, belief or hope pertaining to the proposition in the complement. Note that these verbs will therefore belong to the class of veridical verbs.

that the speaker expects with confidence that the event in the complement can obtain. As Portner (1992) points out "one cannot hope for what one believes to be false" and "It is only possible to hope so long as one still believes there's a chance of satisfaction" (pp.189-190). A counterfactive subjunctive, therefore, is not possible as a complement, hence the ungrammaticality in (96b).

Incidentally, it is worth pointing out that this behaviour of hope is also reflected in French, for instance, since among the desiderative verbs, *espérer* 'hope' singles out by not taking a subjunctive as the other members of this class. Spanish and Russian also employ indicatives with this verb (Noonan, 1985). Sometimes, however, the verb takes a subjunctive complement. Yet, such shifts are accompanied by a change in meaning as well, supporting the idea that the verb itself is responsible for complementation[34] (Giannakidou, 2009, p.6).

Apparently, a similar argumentation applies to *söz ver* 'promise'. One promises for actions that s/he will certainly carry out and are in her/his control. This is why an indicative future is a possible complement type because, as Noonan (1985) indicates, one meaning of an indicative complement like *I will go to Istanbul* shares the same illocutionary force with a promise, namely to assert or declare something.

I will conclude this section by elaborating a little bit more the notorious *söz ver-* 'promise'. Since we have been discussing its "special" behaviour in accepting an indicative complement as well, I would like to mention a specific proposal in Oded (2006) involving this verb.

While analyzing control into purpose clauses in Turkish, Oded makes a controversial claim to the effect that the infinitival complement of *söz ver-* 'promise' can be viewed as an adjunt by providing the following two arguments. The first is the claim that the complement in (97a) can be paraphrased as a purpose clause as in (97b) (p.147)[35]:

(97) a. Sevgi Emel'e erken gel-meğ-e söz ver-di.
S.NOM E.-DAT early come-mAK-DAT promise-PAST.3SG
'Sevgi promised Emel to come early.'

b. Sevgi Emel'e erken gel-mek için söz ver-di.
S.NOM E.-DAT early come-mAK for promise-PAST.3SG
'Sevgi promised Emel in order to come early.'

[34] *Hope* in its directive sense, i.e. when one's hopes are directed towards another individual, *can* shift to being non-veridical and take a *-mA* complement in Turkish.

[35] The translation that Oded gave for (97b) is *Sevgi promised Emel that she would come early.*

The second argument in favor of the adjunct analysis is the so-called double-case restriction in Turkish, which disallows a certain case to be realized twice on arguments (p.148). In light of this restriction, Oded argues that since the infinitival is not an argument but an adjunct, it can bear the same case as *Emel* in (97a). Observe that, irrespectively of these two arguments, neither of which is correct as we shall see shortly, the adjunct analysis would imply that it is possible to promise *without* promising something, which obviously is not the case.

To begin with the first claim, let me note that the examples in (97a) and (97b) are *not* paraphrases of each other as revealed by the fact that only (99a) is acceptable in the context of (98):

(98) In order to earn his trust Ali had to promise Can not to lie.

(99) a. Ali Can'a güven-i-ni kazan-mak için
A.NOM C.-DAT trust-ACC-POSS.3SG earn-mAK for

söz ver-di.
promise-PAST.3SG
'Ali promised Can (not to lie) in order to earn his trust.'

b. Ali Can'a güven-i-ni kazan-mağ-a
A.NOM C.-DAT trust-ACC-POSS.3SG earn-mAK-DAT

söz ver-di.
promise-PAST.3SG
'Ali promised Can to earn his trust.'

The second argument is untenable in view of the fact that we can use double-case in causative constructions (100)[36]:

(100) Kadın çocuğ-a kitab-ı adam-a ver-dir-di.
woman.NOM child-DAT book-ACC man-DAT give-CAUS-PAST.3SG
'The woman had the child give the book to the man.'

In fact, all the evidence that I have presented so far on the relation between control verbs and their complements can be taken as counterarguments to such an adjunct analysis for any control verb, not just for *promise*. For specific arguments for the essentially ditransitive behaviour of *promise*, see Larson (1991) and the references therein.

[36]I would like to thank Cem Bozşahin for pointing this out to me.

CHAPTER 6

IMPLICATIONS FOR ACQUISITION

As the reader will recall, we have argued extensively that to account for the behavior of control verbs, we cannot rely on structural/configurational formulations, movement, and hierarchies of thematic or grammatical relations all of which, as we have seen, had to stipulate the control behaviour of some verb or another. We have also argued that we do not need to appeal to extraneous structures in order to account for the interpretation of the verbal complements as the lexical meaning of the matrix verb enabled us to account not only for the control behaviour in a trivial fashion but also for the interpretation of the VP complements, an observation which we have tried to generalize to other complementation patterns.

At this point one question that comes to mind is the following: What can the additional frames tell the child about the lexical meaning of the verb or, equivalently, how can they ease, if at all, the acquisition of control verbs, especially given the fact that control constructions by their very nature exhibit a kind of complex predication and that the infinitive complements bear no clue as to who-does-what-to-whom and when?

In the remaining part of this discussion, I would like to outline possible implications and the relevance of our study concerning these additional frames to the acquisition of control verbs. Note, however, that I do not intend to imply that these are extensively used by children. I also do not claim that these frames provide the only available or relevant clues to arrive at the correct meaning of control verbs and, consequently, to the interpretation of these constructions as a whole. Quite the contrary. There are intuitively several extra-linguistic factors involved: the concept of self, causation and concerns of simplicity, to name but a few. Rather, my aim here is to point out that these frames, to varying degrees, bear the clues provided by the language itself and therefore can in principle be used to bootstrap the acquisition process.

6.1 Clues from NP complements

An important clue about the argument structure of control verbs seems to come from NP complements. After all, these are the common frames that control verbs like *want*/*begin* or *promise* share with verbs like *read* or *give*, respectively. Such environments provide a clue about the argument structure of these verbs and apparently they are simpler than the canonical control constructions.

Take the verbs like *promise* or *offer*, for instance. The NP frames reveal that these verbs pattern exactly like the verb *give* and therefore may indicate that they encode some sort of transfer just as the double-object/ditransitive verbs in the language. Hence, they will signal that a promise relation, for instance, involves three participants and at least in appropriately modalized circumstances *Mary* in (101a) and (101b) gets a sports car and a permission to leave, respectively (Larson, 1991, p.126):

(101) a. John promised Mary a sports car.

b. John promised permission to leave to Mary.

As regards the interpretation of these complements, recall that we have adopted the approach in Pustejovsky (1991). The basic idea there was to see NPs not as passive arguments but rather view them as associated with a rich array of information which can contribute a lot more to the overall meaning of a sentence. The most relevant information in our case was the events within which a given NP can participate. Now, if the child's lexical knowledge of nouns like, say, *book* or *apple* are structured as in the account proposed by Pustejovsky, i.e. that nouns are, among other information, associated with default events, e.g. *reading* and/or *writing* in the case of *book* and *eating* in the case of *apple*, then these complements provide an additional clue for the lexical meaning of the verb.

The idea here is motivated by two findings about the acquisition of control verbs. One is that the desiderative and aspectual verbs are acquired very early and the first construction to emerge are usually the ones with the NP complements (Van Valin, 2001). The other finding comes from a recent study by Becker (2007) where it is shown that, among several structural and semantic clues, the eventivity of the complement in a control construction is the most robust clue that helps the children assign a control reading to novel verbs. Now, if nouns are encoded with the rich lexical information/world-knowledge mentioned above, then the simple transitive/ditransitive frames will provide a clue to the child that the sentence is about an additional action towards the NP, at least so long as the child's environment is rich enough to give clues about this action, i.e. if these events can be observed in his/her environment.

Here the suggestion is that the child will use the information from the lexical entry of a word like *milk* in order to figure out that a question like *Have you finished your milk?* involves the default drinking event and hence an aspectual like *finish* is different from a canonical transitive like *read*. If the children do look into the complements to acquire aspects of the meaning of the matrix verb, then the early acquisition and simplicity of the NP complements can be a source of bootstrapping. Thus, we are entertaining the possibility of using the semantics of noun complements to infer the lexical meaning of the verb. I suspect that the NP complements are most frequent with desideratives and aspectuals in the adult speech as well which, if true, will lend further support to this idea.

6.2 Clues from other complements

Let's now reflect on what the other complementation patterns in Turkish (except for the infinitive *-mAK*) can provide. We have noted that the most obvious reason distinguishing the suffix *-mA* from *-mAK* is that it must bear person agreement and therefore is not non-finite. Note also that person agreement in Turkish is present both in simple clauses and in subordination with verbal nouns, hence it is also available across other constructions with different verbs. Therefore, this may provide an important clue for the child as to who is the controller in the sentences below. Observe that although agreement may refer to a person in the context in (102a), it unambiguously selects the matrix object as its reference in (102b):

(102) a. Ben$_i$ Ali$_j$'ye çok çalış-ma-sın$_{j/k}$-ı
I.NOM A.-DAT very much study-mA-POSS.3SG-ACC

tavsiye et-ti-m.
recommend-PAST-1SG
'I recommended Ali that s/he study very much.'

b. Ben$_i$ Ali$_j$'ye çok çalış-ma-sın$_{j/*k}$-ı
I.NOM A.-DAT very much study-mA-POSS.3SG-ACC

yasakla-dı-m/emret-ti-m.
forbid-PAST-1SG/order-PAST-1SG
'I forbade/ordered Ali that he study very much.'

A further point is that when the matrix object is not in the third person, the agreement suffix in the complement will again select its reference unambiguously regardless of

the object-control verb. Evidently, this provides a robust clue as to which of the two participants is projected into the complement.

Recall that this complement type was not possible with subject-control verbs (except for some cases we have discussed above) or implicative control verbs. Now, if we follow Erguvanlı-Taylan (1990) and take *-mA* as a variant of the same morpheme as the suffix *-mAK* but encoding switch reference, then the early acquisition of verbs like *iste-* 'want' can also provide a clue that this suffix signals switch reference. The reason is that the raising-to-object construction in English in (103a) is formed with the suffix *-mA* in Turkish as illustrated in (103b). As we have seen, the subject-control case cannot be encoded with agreement (recall the obviation effect). Yet, when there is another participant agreement is obligatory:

(103) a. I want you to go to the cinema.

b. Sen-in sinema-ya git-me-n-i
you-GEN.2SG cinema-DAT go-mA-POSS.2SG-ACC

ist-iyor-um.
want-PROG-1SG
'I want you to go to the cinema.'

This pattern is also encountered in purpose clauses when the individual who carries out the action in the complement is not the subject of the matrix clause (compare (104a,b)):

(104) a. Yol-da ye-mek için bir elma al-dı-m.
way-LOC eat-mAK for one apple buy-PAST-1SG
'I bought an apple to eat on the way.'

b. Yol-da ye-me-si için Ali'ye bir elma
way-LOC eat-mA-POSS.3SG for A.-DAT one apple

al-dı-m.
buy-PAST-1SG
'I bought an apple for Ali to eat on the way.'

Although the regulating heads are different in control and purposive constructions—the matrix verb in the former, the preposition in the latter—note that they share one important

aspect regarding the interpretation of their complements, namely a future-oriented reading which, in turn, depends on the semantics of the head itself. Apparently, these structural and semantic commonalities should be important since they are encoded with the same complementation patterns. Of course, ultimately, the competence grammar should analyze the verbal complement as a genuine complement in the control case and as an adjunct for the purposive clauses.

The last point that I would like to make involves the complements with indicative future which we have seen to be available for some control verbs like *söz ver-* 'promise'. Observe that these frames provide not only the controller information through agreement but also tense and mood information through the suffix *-(y)AcAK* which is again used in other constructions for signaling future tense:

(105) Ben sınav-a çalış-acağ-ım-a söz ver-di-m.
I.NOM exam-DAT study-AcAK-POSS.1SG-DAT promise-PAST-1SG
'I promised that I will study for the exam.'

All in all, the main idea in the above discussion is that the non-control frames of control verbs provide several clues pertaining to the lexical meaning of the verb, namely information about (i) its argument structure, (ii) the controller in the canonical infinitival frame, and (iii) the tense and the mood of the complement, i.e. clues about its interpretation. Note that for the cases where the verb takes an infinitive and forms a control sentence, we have seen that all this information follows from the meaning of the matrix verb.

6.2.1 Aksu-Koç & Ketrez (2003) and Goodluck et al. (2001)

I would like to devote this section to two recent acquisition studies which, I think, lend support to the plausibility of the ideas outlined above. Recall that one of the basic motivations for our proposal was the fact that certain clues related to the interpretation of control constructions are explicity marked when the verbs take different complements. We have suggested that these overt markers can be a source to bootstrap the acquisition process, at least for some control verbs, as they are also present all throughout the language. Now, is there evidence that children acquire these markers early enough so that we can entertain the possibility of their relevance?

Aksu-Koç & Ketrez (2003) claim that the answer is positive. Indeed, their studies have shown that at the age of 20 months Turkish children seem to have grasped the basic patterns of verb inflection including different Tense-Aspect-Mood (TAM) markers and agreement. Aksu-Koç & Ketrez relates this "precocious" competence to the fact that there are no

inflectional subclasses and that the TAM and agreement morphology is extremely regular in Turkish (p.48).

The second study that I would like to present is concerned specifically with control. Although the studies on the acquisiton of control are generally couched in different theoretical assumptions, which do effect the interpretations of the results, I think the findings of Goodluck et al. (2001) support our approach on a closer look. This study is somewhat limited both in terms of the verbs that are tested (only the verbs *want*, *try* and in some cases *order* are tested in Goodluck et al.'s study) and in terms of the dimensions of learning that are taken into account, but can still provide evidence for our hypothesis.

6.2.1.1 Goodluck et al. (2001)

The studies on the acquisition of control in English have generally shown that at 4-5 years of age children have a grasp of the control phenomena despite the fact that their performance is not error-free (Goodluck et al., 2001, p.155). Eisenberg & Cairns (1994), for instance, have demonstrated that 3-5 year-old children have a high level of success with the verbs *want*, *try* and *say* in English. Of course, as Goodluck et al. point out, it does not follow that this should be the case cross-linguistically as different languages diverge from English both on lexical and structural dimensions which plausibly have an impact on the mastery of control. Their study becomes relevant since it brings evidence from Greek and Spanish.

Before going into the details of this work, we should begin with some basic facts about control in Greek and Spanish. As noted earlier, there is only finite complementation in Greek and the verbs *want* and *try* both take a subjunctive complement which is marked for agreement and minimally for tense[37]. Yet, they differ in the interpretation in that the complement's subject can refer both to the matrix subject and to someone outside the sentence for *want*, whereas it can only refer to the matrix subject in the case of *try*, which is not surprising if one takes into account the semantics of these verbs:

(106) a. I Maria$_i$ theli na tragoudisi$_{i/j}$.
The Maria want-3SG PRT sing-3SG-SUBJ
'Maria wants to sing' or 'Maria wants someone else to sing.'

[37] As is apparent from the discussions so far, Greek in fact does not exhibit true control. The results to be discussed here are therefore important in showing the lexical competence attained at the ages mentioned.

b. I Maria$_i$ prospathi na tragoudisi$_{i/*j}$.
The Maria try-3SG PRT sing-3SG-SUBJ
'Maria tries to sing.' (Goodluck et al., 2001, p.156)

Spanish, on the other hand, is more similar to Turkish as it possesses the infinitive as well as the subjunctive. The latter is introduced by the complementizer *que* and it barrs coreference with the matrix subject[38]:

(107) a. María$_i$ quiere/intenta cantar$_{i/*j}$.
Maria want-3SG/try-3SG sing-INF
'Maria tries/wants to sing.'

b. María$_i$ quiere/intenta que cante$_{j/*i}$.
Maria want-3SG/try-3SG COMP sing-SUBJ.3SG
'Maria wants/tries (for) someone else to sing.'

(Goodluck et al., 2001, p.157)

The study of Goodluck et al. (2001) has shown that Greek children aged 4-5 make a distinction between *want* and *try*. They allow both internal and external reference with the former and almost always internal reference with the latter, despite the fact that both verbs subcategorize for the same type of complement. Their responses align with those of the adult participants who allowed external reference with *want* half of the time, especially when they are pointed towards external reference at the beginning of the experiment by a sentence using the verb *diatazo* 'order' (p.161).

On the other hand, a similar experiment with the Spanish children revealed that they allowed coreference with the matrix subject for both *want* and *try* when the complement

[38]For most speakers of English, sentences where the verb *try* has an object, as in *Bill tried for Mary to get elected*, is bad. And when it is acceptable at all, it is interpreted with the expected meaning, i.e. that *'Bill exerted himself so that Mary might get elected'* (Pesetsky, 2003). Hence, the semantics of *try* cannot be overridden in that there is always an action carried out by the *trier*.

Indeed, as Dowty et al. (1981, p.236) point out, a sentence like **Bill tried for Mary to walk*, appears to be not only syntactically ill-formed but meaningless as the meaning of a *try*-sentence is not a composition of a matrix subject, a verb and an arbitrary embedded sentence but one which has the *same* subject as the matrix subject. It is this compositional semantics of the verb *try* that forces one to interpret a *try-for* sentence, if at all, as involving an effort on the part of the matrix subject.

Note also that a *try*-sentence where the complement denotes a state, e.g. *Mary to get elected*, is much better than a sentence where the complement denotes an action, e.g. *Mary to walk*. The first type of sentences possibly involve coerced action interpretations to highlight the agentive role of the matrix subject so that the *exert oneself* reading can be obtained. I suspect that the same interpretation is valid for the Spanish sentences.

was a subjunctive although the adult interpretation of these structures require disjoint reference. For the children aged 6-7 years old, there was a higher success rate compared to the younger ones for whom external reference is argued to be harder. Yet, when the children are forced to consider external reference in a follow-up experiment, Goodluck et al. found a significant difference between the infinitive and the subjunctive in that the children permitted external reference more readily with the subjunctive both for *want* and *try*.

Goodluck et al. argue that these results indicate two things: (i) that the Greek children are sensitive to lexical semantics and (ii) that the Spanish children are sensitive to structural properties of the complement. They also argue that external reference is harder to assign which might explain the deviation from the adult grammar in some cases. Let's take each of these points in turn.

It seems to me that it is safe to accept that the findings for the Greek case indeed show that the lexical semantics for these verbs are acquired early and that children are aware of the difference between the verb *want* and *try*. Recall that they allow only internal and both internal and external reference for *try* and *want*, respectively, despite the same syntactic environment.

In the Spanish case, however, both structural *and* lexical information are important, I think. The structural dimension is revealed in the follow-up experiment where children distinguish between subjunctive and infinitive complements, which, incidentally, is in accord with our suggestion in the previous section. The lexical dimension, on the other hand, is apparent in the first experiment since the lexical meaning of *try* (cf. fn.35) overrides the requirement for disjoint reference.

Having said this, one can of course ask why the lexical dimension does not apply to the case with *want* since it seems to be fully acquired by the Greek children of the same age, yet is mostly assigned an internal reference by Spanish children when the complement is a subjunctive. I think one of the points that is overlooked in this study is that all the sentences involve third person subjects in the matrix clause and third person agreement in the complement. Therefore, it seems to be a good idea to have distinct arguments, say, first person matrix subject and second person complement subject, because then the subjunctive will bear a distinctive agreement marker and the children will possibly assign the desired external reading. This would also show another aspect of their sensitivity to the structure of the complement.

All in all, then, the study of Goodluck et al. have revealed that by the age of 4, children seem to acquire the basics and are sensitive both to the lexical semantics of control verbs and to the structural properties of their complements. The latter type of sensitivity is

evidenced by the observation that they switch towards internal reference via a switch from subjunctive to infinitive complements. Goodluck et al. conjecture that if there is indeed a stage of control which is lexically guided, then the mastery of verb inflection, i.e. overt evidence of morphemes, can be a source of adjustment based on structure, as we have suggested in the previous section[39]. Such a mastery will potentially help the child to overcome the control structure of arguably harder verbs, i.e. those encoding more complex state-of-affairs.

6.3 Further remarks about the acquisition of control

I believe it is worth pointing out that the interaction scenario outlined above does not have to be one-sided. Indeed, some verbs like *iste-* 'want', *başla-* 'begin' and *bitir-* 'finish' are possibly more frequent than other control verbs in child-directed speech. The verb *iste-* 'want', for instance, is cited as the first verb to be acquired among the control verbs. In fact, a strong cross-linguistic generalization that follows from language acquisition data is that the first relation that emerges is the one encoded by psych-action verbs which express the child's desires (Van Valin, 2001). This is why we have suggested that the early acquisition of *iste-* 'want' and the fact that it can take both *-mA* and *-mAK* clauses can provide a structural clue.

Moreover, note that psych-action and aspectual verbs encode a simpler relation than object-control verbs, a relation which involves a single individual shared by two verbs as opposed to an argument having different roles with respect to different verbs simultaneously (Van Valin, 2001). As such, these verbs may well be acquired earlier due to this simplicity and frequency. Therefore, arriving at the right interpretation of the additional frames will be made easier by this knowledge.

Before concluding this section, I would like to talk about the development of commissive verbs like *promise*. The verb *promise* is cited as a verb that is acquired latest among the class of control verbs (e.g., Chomsky, 1969), an observation which is frequently used to back the theory of control one endorses (e.g., Rosenbaum, 1967; Hornstein, 1999). The reason is that verbs like *promise* escape an explanation formulated solely in terms of structural relations and are therefore claimed to be exceptional or marked cases. The late acquisition of this verb is argued to reflect this markedness. Assuming that this is (largely) the case

[39]Goodluck et al. argue that such an adjusment will not be based on lexical semantics but on structure. Note, however, that the interaction of the matrix verb and the complement, and the structural properties of the latter, depend on the lexical semantics of the control verb.

cross-linguistically, how can we account for its late acquisition, at least relative to other control verbs?

It seems to me that a possible way of approaching this problem is to observe that what has to be acquired in the case of *söz ver-* 'promise' is an important aspect of its meaning, namely that it encodes a relation that does not refer to the here and now but rather one that refers to the now and the future. This relation is even more explicit when the verb takes the indicative complement marking the relative tense with a suffix. Hence, on the semantic side, other than figuring out the ditransitive relation it expresses, the child has to learn that this verb signals a *cause*, as it were, something that is carried out now—a commitment—and a *result* thereof in the future and their intimate relationship. In other words, s/he has to be aware of the time difference between the act of promising and its results in the future. And this brings in the question of when exactly children learn to interpret one action relative to another action time-wise. I suspect that this temporal sequencing is harder to interpret than the verbs encoding a simultaneous event like aspectuals, implicatives and modals.

Of course, this relative time-dependency (e.g. the future/hypothetical interpretation) of the complement is present with other control verbs like desideratives, for instance, which are acquired very early as we have noted above. But in these cases other semantic factors come into play, namely the mental dispositions of the child like desiring, wishing or wanting which are themselves acquired earlier due to their additional natural salience for the child (Budwig, 1986).

The case of object-control verbs presents a similar challenge. First, they encode a three-place relation by their very nature and therefore are harder to grasp compared to a subject-control verb in terms of simplicity. But, then, there comes the important and salient concept of causation that some of these verbs encode (Van Valin, 2001). Other object-control verbs, say, directives likes *ask* and *order*, involve both time-dependence and world-dependence, and the their acquisition will likely be affected by these aspects of their meaning.

In each case, however, an interaction scenario would be in accord with the verb learning literature (e.g., Gleitman, 1990) which suggests that a learner has to consider multiple frames in which a certain verb appears to figure out its lexical meaning. Note that in our case we have several frames all emerging from the interaction between the complementation patterns of a language and the lexical meaning of the verb. Besides, in some cases there are passivized and/or detransitivized counterparts of these verbs which may provide extra information. Since the verb assumes a constant (or relatively constant) meaning across these constructions, children may use them to narrow down their hypotheses space. The exact pattern and time-course of the acquisition of these verbs calls for a longitudinal study

but I think it is clear from the linguistic investigation that the question is not when the theory-internal devices are acquired but rather when the children fully acquire the aspects of the meaning of a particular verb. Whether the extra frames that we encounter in Turkish and the cues they provide are used to converge at the correct interpretations has to be a part of this longitudinal and empirical investigation.

CHAPTER 7

CONCLUSION

The beginnings of this study were based on the observation that control verbs are not confined to their canonical infinitival frames and may well occur with other complements, a fact which, as we have seen, is conditioned by the meaning of the verb and the complementation patterns in a given language. To arrive at a principled way of accounting for this behaviour and to see the extent to which additional subcategorizations go, we had to, first, understand the vexed questions about control, most notably the problem of controller choice. While reviewing these questions surrounding control phenomena, we have particularly defended the null hypotheses about controller selection and about the syntactic and semantic status of the controlled complement. These issues in turn helped us gain an understanding about the behaviour of control verbs in general and their relation with their verbal complements in particular. We have seen that, just as in the case of controller choice and other semantically-based phenomena related to control, the relation between the verb and its complement can be understood by focusing on the lexical meaning of the verb. After all, it was the lexical semantics of the matrix verb that tells us how to interpret the infinitive which lacks clues to its interpretation, e.g. person, tense and mood.

Next we went on to see the interaction of control verbs with different types of NP complements and the remaining verbal nouns in Turkish. In the first case, we have seen that most control verbs allow a simple or an event-denoting NP and that the canonical control behaviour holds in each case. In the former scenario, we have also seen that an action towards the NP is entailed (Dowty, 1985) as a result of the interaction of the meaning of the verb and the qualia structure of the NP, an account formulated by Pustejovsky (1991).

Regarding the acceptability of the verbal nouns other than the infinitive *-mAK*, we have observed that *-DIK* and *-AcAK* are ruled out in almost all cases due to the entailments of the verb towards its complement. Yet, we have also seen that the latter suffix is indeed possible with some verbs, e.g. *söz ver-* 'promise', a fact which we have again linked to the meaning of the verb. This shows indeed that verb semantics encodes an important amount of information and a felicitous sentence therefore results from the interaction of the meaning

of the complement and the requirements of the matrix verb. Additionally, we have provided evidence for the subjunctive analysis of *-mA* complements in Turkish and discussed where and why they are or are not acceptable. Of course, the study of subjunctives, obviation and mood distribution are in fact subsumed by the study of complementation which is itself a huge and intricate topic and we have no claim of being comprehensive in the above discussion. We have only concerned ourselves with the cases that have come up in our quest to see the extent of the multiple subcategorization frames of control verbs in Turkish. Therefore, I think it is fair to say that this study belongs to the huge and intricate area of complementation but is restricted to the case of control verbs.

There may be more subtle differences between the different complement types and, together with a more fine-grained understanding of verbs, they might give us a better grasp of the phenomena. Moreover, there are the language particular facts about complementation and we may see—and in fact have seen—that not all verbs behave in the same fashion cross-linguistically. Apparently, these cases should be scrutinized for each language and for each complement-taking predicate.

To sum up, then, what we have observed so far boils down to the observation that an adequate understanding of the nature of control verbs in general, and their behaviour in Turkish in particular, can give us a deeper insight into their behaviour with non-canonical complements. Note that each felicitous subcategorization frame of a given control verb, or the lack thereof, was linked to the semantics of the verb—we are just seeing the same requirements and characteristics in different guises. And we were lucky since Turkish provides a variety of complement types that we can come across in environments containing control verbs. A different language may not have the infinitive, for instance, and therefore would not exhibit control in the first place.

Lastly, the study of taking into account different subcategorization frames of a control verb and their relation with the verb itself has enabled us to suggest ways of looking at the acquisition of control. We have entertained the possibility that children use the non-canonical complements by suggesting that they provide certain clues that may plausibly help bootstrap the acquisition process. In particular, this study has stressed (i) that control verbs involve temporality and modality which, as von Fintel (2006) points out, enable us to talk about affairs beyond the here and now, (ii) that they encode a complex predication which is sometimes two- and sometimes three-place, and (iii) that extra-linguistic factors figure prominently in their acquisition due to the state-of-affairs the verbs encode. Upon closer investigation, we have especially observed the reflections of points (i) and (iii). These observations suggest that the acquisition of control is in fact much more than just figuring out the reference of the "unexpressed" subject of the complement.

There is reason to believe that the acquisition of control verbs cannot be stripped away from these aspects of their meaning, which in some cases may give rise to an early and in other cases a delayed competence of a particular verb. Hence, any approach that disregards these aspects of the verbs' inherent meaning and intead makes claims about their acquisition by considering only the devices alleged to account for their interpretation in a linguistic theory, e.g. c-command, movement, etc. is bound to be incomplete with regard to language acquisition as well.

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