

ON *TOUGH*-CONSTRUCTIONS AND CONSTRUUAL-AS-MOVEMENT

BE TOUGH! IT'S TOO EASY TO GIVE UP

By

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ACKNOWLEDGMENTS, DEDICATION

To disambiguate “It’s too easy to give up” would force me to admit only one interpretation of the subtitle of this thesis. By my count, the sentence is at least 8 ways ambiguous ($2^3=8$), not counting the insurmountable ambiguity encountered if the complement of *easy* has been elided. As one discovers in this thesis, *to give up* can be interpreted as the complement of either the degree ADV *too*, or the ADJ *easy*. The VP *to give up* can be intransitive, meaning “to quit”, or have a transitive reading in which the object is unstated. The subject *it* can be interpreted deictically as the object of *to give up* or can be interpreted as a pleonastic, leaving the object of the lower CP unknown. All this ambiguity leads to a more interesting question (that is, the one outside of linguistic analysis): If the matrix subject *it* has originated as the object of the CP and is deictic, to what does *it* refer?

This thesis was largely researched and written during the most tumultuous chapter of my life, as it was turned upside-down, shaken around, and then turned right-side up again. It seems as if every facet of my identity has been reanalyzed, re-evaluated, and rewritten and that who I am leaving this MA is a completely different person than the one who began. The thesis itself had nothing to do with these personal events. But the fact that it exists and its completion was achieved is a reflection of the period of my life it was created during.

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Special thanks to Acrisio Pires for bringing the final copies of this thesis to Starkweather Hall for binding.

I choose to leave "it's too easy to give up" ambiguous, except to say that giving up was never an option. To give up would be to admit that all those who have invested their time, energy, money, and moral support in me were mistaken in their commitment. All those whom I have mentioned here are far too bright and dedicated for me to insult them by suggesting that their confidence in me and my abilities was misplaced. Without their bolstering, I probably would have given up. But with this amazingly supportive community, I had no option but to continue on, striving to find out what is next on the horizon.

This thesis (and most everything I do) is dedicated to Grace Kathryn Taylor Loring, who is way too cool to think that someone who reads Chomsky and likes it is anything but a big geek.

ABSTRACT

Following minimalist methods, this thesis attempts to derive *tough*-constructions without postulating obligatory control PRO or the control module. Instead, I propose a framework that utilizes construal-as-movement. The matrix subject is understood as the object of the lower CP in the ADJP because the matrix subject has moved from the object position.

This analysis adopts the advantages of the construal-as-movement analysis of Hornstein (2001). As covered in this thesis, there are problems with Hornstein (2001). Under my analysis, these shortcomings are resolved. The infinitive CP in *tough*-constructions is the sister to the *tough*-ADJ, creating a larger ADJP. I also argue that *tough*-movement is a result of a [+nom] case feature on the object in the infinitive CP. This [+nom] feature explains the parasitic gap-like behavior of *tough*-constructions involving degree ADVPs (data introduced in the literature here for the first time). The derivation of this new data assumes sideward movement.

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CHAPTER 1

INTRODUCTION

1.1 *Tough*-constructions

Tough-constructions have been discussed in the literature for decades (at least since Chomsky, 1964). Within these expressions a *tough* adjective (*tough*-ADJ) can subcategorize for a CP, and the object within this CP may appear as the matrix subject of the entire expression.

- (1) a. It is easy to please John
b. John is easy to please

It is generally accepted in the literature that (1a) and (1b) have the same semantic interpretation, with minor exceptions relating to scope of negation items and scope of quantifiers. These will not be addressed in this thesis, as they are irrelevant to the topic of inquiry.

In (1a), *John* is seen overtly in the object position of the infinitive CP. In (1b), though, the logical object is now seen overtly as the matrix subject of the entire expression. A great deal of effort has gone into explaining how this type of expression might be derived, and important theoretical discoveries have been made.

In this thesis, I argue that the infinitive CP *to please John* is the complement of the *tough*-ADJ *easy* in (1a) and in (1b). This idea is not my own, but the validity of this claim has been contested recently in the literature. In the next section I will introduce new data that include *tough*-constructions and degree adverb phrases. While presenting these new data, I assume that a *tough*-ADJ takes an infinitive complement. It is easiest to demonstrate the phenomenon of a degree adverb phrase modifying a *tough*-ADJ if the

claim that a *tough*-ADJ takes an infinitive complement is assumed to be fact. Though I do not present support for this claim now, it is well supported in this thesis.

1.2 New data in this thesis

Degree adverbs and their complements have been discussed in the literature before (Lasnik & Fiengo, 1974). To review evidence for this claim, a certain class of degree adverbs (*too*, *enough*) subcategorize for a non-finite CP as seen in (2):

- (2)
- a. The flowers are blue
 - b. * The flowers are blue to ignore
 - c. * The flowers are blue to notice
 - d. The flowers are too blue to ignore
 - e. The flowers are blue enough to notice

In (2a), we can see that the ADJ *blue* can appear without a complement and the expression is grammatical. However, in (2b) and (2c), as soon as an infinitive CP is introduced into the expression, the expression becomes ungrammatical. This could be explained by many principles depending on what theoretical framework is being utilized. To put it in the most uncontroversial and general way, however, *blue* simply cannot take an infinitive CP as a complement. The interesting part of this data set is how strongly the grammaticality of (2d) and (2e) contrasts with that of (2b) and (2c). In the absence of another explanation, it seems clear that the degree ADV (*too* in (2d) and *enough* in (2e)) in these examples must be taking the infinitive CP as a complement.

To return to *tough*-constructions, given the data in (1) and (2), the question can be posed: Can both a *tough*-ADJ and its complement (an ADJP) and a degree adverb and its complement (an ADVP) coexist in the same expression? The answer is yes, as seen in (3):

- (3) John is too easy to find to play hide-n-seek with

In (3), *John* must be understood as the logical object of both the infinitive CP *to find* and the infinitive CP *to play hide-n-seek*. To the best of my knowledge, no one has discussed these data previously.

In this thesis, the data involving degree adverbs will almost exclusively use the adverb *too*. Though there is a great deal of literature on degree adverbs and a great deal that could be said about the degree adverb complementation, I chose to limit the scope of this research and not to include investigation into these topics. The inquiry I do concentrate on, though, benefits from certain unique syntactic and semantic characteristics of *too*.

In (3), the degree ADV *too* takes as its complement the infinitive CP *to play hide-n-seek with*. How can this be determined? Can we not interpret that this infinitive CP is the complement of the *tough*-ADJ and *to find* is the complement of *too*? Interestingly, *too* has a [+neg] feature:

- (4) a. Chris is sad to leave
b. Chris is too sad to leave

In (4a), the ADJ *sad* can subcategorize for an infinitive complement. We have already deduced in the examples above in (2) that the degree ADV *too* also can take its own infinitive complement. The question then arises, in (4b) how can the head of the CP *to leave* be determined? There are two different interpretations of (4b), one in which the infinitive CP is the complement of the ADJ *sad* and one in which the infinitive CP is headed by the degree ADV *too*. Fortunately, because the degree ADV *too* possesses a [+neg] feature, this [+neg] feature has scope over the complement of *too*. The interpretation of (4b) in which the infinitive CP is headed by *too* can be paraphrased “Chris is so sad that he is unable to leave.” This reading would be contradictory to any

reading of (4a), in which the infinitive CP must be interpreted as the complement of the ADJ *sad*. This [+neg] feature and the CP it has scope over are easily detected, and the presence of both greatly aided in determining the syntactic structure of the new data.

1.3 Construal-as-Movement

I adopt construal-as-movement as the process by which the data is derived under the minimalist program. This idea is not new to syntax and my use of construal-as-movement largely follows that of my predecessors. However, the existing construal-as-movement analyses of *tough*-constructions are problematic. I seek to overcome these problems in this analysis. Also, this analysis is able to account for the data just introduced that involve degree ADVPs.

The benefits of a construal-as-movement analysis are appealing: (1) There is no need for obligatorily controlled PRO, and (2) the interpretation of empty positions is understood because a copy of the DP/NP is occupying this position and is merely phonetically unrealized. Despite these benefits, the analysis I present touches on deep theoretical questions of which I only scratch the surface here.

The derivation of the new data using construal-as-movement presents an interesting challenge. In (3), the object of the infinitive complement of *too* is necessarily interpreted as coreferent with the matrix subject. Under a construal-as-movement analysis, then, a derivation of (3) must include a sequence of movements in which the ultimate matrix subject moves through the object positions of both the CP of the degree ADVP and the CP of the *tough*-ADJ. As a part of this analysis, I adopt sideward movement to derive the new data.

1.4 Summary

In chapter 2, I present a review of the analysis of *tough*-constructions in Chomsky (1981). Along with this review, I make one change to this analysis to explain the results when the new data involving degree ADVs is taken into account. I suggest that a heavy reliance upon the theta criterion explains the data and that an ADVP node could block the transfer of the theta-role of an A'-chain.

Chapter 3 takes a much harder look at the tenets of GB theory and the problems surrounding its treatment of *tough*-constructions that are already known. As a result of these problems, the theta criterion, the PRO theorem, control theory (by which co-indexation of null operators with an antecedent occurs), and binding theory all become suspect in a scientific explanation of the data.

As a result of this dismissal of most of the framework of GB theory, in chapter 4 I examine already existing construal-as-movement analyses of *tough*-constructions, most closely reviewing Hornstein (2001). I show the shortcomings of this analysis as it relates to what are traditional *tough*-constructions and also the shortcomings of this analysis in treating the new data introduced here.

Chapter 5 deals almost exclusively with my alternative construal-as-movement analysis of *tough*-constructions and of the new data. I raise theoretical problems that this analysis poses that remain to be solved. I also cover in this chapter the striking similarity of the new data to parasitic gap constructions and provide one explanation for why this phenomenon exists in the new data as well as in parasitic gap constructions.

Tough-constructions and construal-as-movement have posed challenges to a unified theory of syntax for decades. The analysis I present here lends a new look at old

data and old approaches. By introducing new data to the pot of information and proposing a workable analysis of these data, the theory is pushed a little closer to something unified and simple.

CHAPTER 2

BACKGROUND OF *TOUGH*-CONSTRUCTIONS IN THE GB FRAMEWORK

2.1 Introduction

In this chapter I will review the analysis of *tough*-constructions in Chomsky (1981). The collective theories that comprise government and binding theory are presented together in Chomsky (1981). The analysis of *tough*-constructions presented in this work is an attempt to explain the derivation of these expressions while also adhering to the principles and constraints of GB. When these expressions were first introduced in the literature (Chomsky, 1964), a simple movement derivation was proposed. However, as I will show in the review of the GB analysis, a derivation utilizing only movement of the ultimate matrix subject would violate at least one constraint held to be fundamental to GB theory, the Specified Subject Condition. Consequently, formulating a new derivation that better upheld the tenets of GB theory was desirable.

After reviewing the Chomsky (1981) analysis, I made a revision to it: an empty-operator A'-chain not only can transfer its theta-role to the matrix subject, it must do so unless this A'-chain is blocked by a dominating ADVP. This revision results in the following: The theta criterion alone can explain the grammaticality or ungrammaticality of a large body of data that I will present in this chapter. Included in the body of data that supports this revision are the new data involving degree ADVPs, which were introduced in chapter 1.

The background analysis presented here is taken largely from Chomsky (1981) and influenced greatly by other works leading up to this publication (Chomsky 1964;

1977; Ross 1967; Akmajian 1972; Lasnik and Fiengo 1974). In the Chomsky (1981) analysis, several constraints of GB theory are appealed to in order to explain the phenomenon of *tough*-movement without movement of the ultimate matrix subject and without deletion of the object of the CP. The explanation of the data under the GB framework (Chomsky, 1981) relied heavily upon the empty operator PRO, the movement of this PRO from object position to Spec CP (creating an A'-chain), and the transfer of the theta role of that A'-chain to the matrix subject.

The analysis of *tough*-constructions in *LGB* represents a culmination of the works above and the leading explanation for the data prior to the theoretical shift to the minimalist program.

2.2 *Tough* in GB

To the best of my knowledge, sentences like (1) first appeared in the literature in Chomsky (1964):

- (1) a. John is easy to please
b. John is eager to please

The contrast of these two expressions lies in whether (apparent) raising of an object or subject from the lower CP is permitted. In (1a), *John* can only be understood as the object of the verb *please*, and in (1b), *John* can only be understood as the subject of *please* (i.e., the verb *please* has an unspecified object reading in (1b)). This contrast can be seen more clearly in (2) and (3) through standard annotation:

- (2) a. *John_i is easy PRO_i to please
b. John_i is eager PRO_i to please

- (3) a. John is easy PRO_{arb} to please _____
 ^ _____ |
 b. *John is eager PRO_{arb} to please _____
 ^ _____ |

(4) and (5) also show the contrast between the observable syntactic qualities of *easy* and *eager* by varying the object in the lower CP of each expression:

- (4) a. It is easy to please John
 b. *It is eager to please John
- (5) a. *John is easy to please Mary
 b. John is eager to please Mary

In (4a), *John* is left in its understood semantic position, the object of *please*. In this expression, no semantically contentful subject occupies the matrix subject position, and by hypothesis, the Extended Projection Principle (EPP) demands that a subject be present (all VPs have a subject). Since English is not a null-subject language and the VP is tensed, an overt subject must be present to check the phi-features of the tensed IP. To satisfy these theoretical requirements, the semantically null and syntactically overt pleonastic *it* is inserted in the matrix subject position. In contrast, when the ADJ *eager* is present (instead of *easy*) in this type of expression (as in (4b)), insertion of a semantically null subject does not satisfy the syntactic requirements of the complete expression (specifically, *eager* must assign a theta-role to its subject, and pleonastic *it* cannot bear a theta-role). (5a) contrasts with (4a) in this way: it appears that a semantically contentful subject in the matrix subject position cannot originate in this position. As we will see in this chapter, a semantically contentful matrix subject in an expression like (5a) must either have moved to the matrix subject position from the lower object position or be coreferenced with some null operator in the lower object position. Much of the work

investigating *tough*-constructions has involved determining whether the matrix subject moves to this position from the lower object position or whether it is inserted as matrix subject and coreferenced with some null operator in the object position and thus interpreted as the object of the lower VP. Of important note here, though, is that this matrix subject cannot have moved from or be coreferenced with the subject position of the CP. In contrast, (5b) clearly shows that when the ADJ *eager* is present, the matrix subject does not originate as the lower object, as this position is filled with an overt A-expression. The matrix subject must have moved from or be coreferenced with the subject of the lower CP. In other words, (5b) can only be interpreted by the paraphrase “John is eager for himself to please Mary.”

Put simply, the predicate [is easy for X to please Y] can only allow coreference of Y with the matrix subject, and the predicate [is eager for X to please Y] can only allow coreference of X with the matrix subject. Whether these lexical items (X, Y) are actually moving or are coreferenced with some null operator is still under debate. Regardless, the observed phenomenon I just described remains. Consequently, I will present evidence that this contrast can be explained under the GB analysis by the theta criterion.

- (6) It is easy to find John
- (7) John is easy to find
- (8) *It is eager to find John (where *it* is pleonastic)
- (9) *John is eager to find

Note that in all these examples, the verb *find* is being interpreted transitively. In considering these, it is important to make the distinction between two classes of adjectives; namely, ADJs either do or do not have a theta-role to assign to their subject. *Easy* does not have a theta-role to assign to its subject; I take (6) as evidence of this.¹

The overt subject (pleonastic *it*) in (6) is not semantically contentful; thus, it cannot be

assigned a theta-role. In (7), the challenge is to determine what assigns the theta-role that *John* possesses, since neither *easy* nor *is* has a theta-role to assign to the subject. In an attempt to satisfy most of the rules and constraints of government and binding theory, Chomsky argued in *LGB* (1981) that the empty-operator chain (PRO, t) transfers its theta-role to *John*.

In (8) and (9), however, we are faced with the ADJ *eager*, which assigns a theta-role to its subject, as evidenced by (8). In (8), the simple explanation for the ungrammaticality is that *eager* has a theta-role to assign and no semantically contentful subject to assign it to. GB relies upon selectional constraints to explain the ungrammaticality of (9); that is, that *eager* cannot select an empty-operator chain contained within its complement. This achieves descriptive adequacy although it relies upon the stipulation of additional mechanisms (a restriction as specific as a subcategorization frame that disallows a specific null-operator chain). I will introduce here a new analysis that shows that (9) is ungrammatical due to a theta criterion violation, namely, that the matrix subject *John* receives two theta roles.

To explicitly demonstrate this analysis, as well as the distinction between ADJs like *easy* and *eager*, the derivations of (6)–(9) are carefully examined below.

The proposed derivation of (7), according to Chomsky (1981), is as follows:

(7)b. DS is easy_{CP} [IP [PRO_{arb} to find PRO_i]

It should be noted here that *John* is not present at D-structure. As we will see, it is claimed that *John* is inserted at SS, an unprecedented notion that admittedly is not a clean solution. In a strict adherence to the tenets of GB theory, the presence of *John* at D-structure would produce the semantically equivalent (and grammatical) (6):

behavior of the empty operator PRO, then, is much like the behavior of wh-elements. By proposing this almost identical set of operations, PRO was considered to have wh-like properties. The consequence of PRO behaving like a wh-phrase and possessing wh-like properties became relevant in later reevaluation of this analysis for binding condition C (Brody 1993). To discuss here the possible implications and ramifications of PRO being very similar to a wh-element would take us too far off course for the current objective at hand, but I return to this issues in chapter 3 and address it there. What is important to note here is that the proposed analysis for *tough*-movement in Chomsky (1981) was based on already well-established theoretical principles.

Let's turn now to (9).

(9) *John is eager to find

The ungrammaticality of (9) was explained by positing that the ADJ *eager* (and ADJs like it—*anxious, ready, happy*) could not subcategorize for a CP in which an empty-operator A'-chain could be created. I would like to propose the following revision to the classic GB analysis I have reviewed in this chapter thus far: (9) is ungrammatical due to a theta criterion violation. Consider the D-structure (9b):

(9b) DS John_i is eager_{CP}[IP [PRO_{arb} to find PRO_i]

First, as we saw above, *eager* is an adjective that assigns a theta-role to its subject (thus, in (9b) *eager* assigns one theta-role to *John*). If *John* gets another theta-role, there will be a theta criterion violation. I propose that this is precisely what does happen. PRO receives a theta-role from *find* and must move out of its governed position to the closest position it can occupy: That position is SpecCP.

(9c) John_i is eager_{CP}[PRO_i IP [PRO_{arb} to find *t_i*]

|—————|

Since the theta-role transfer of the A'-chain is available and not prohibited, it must assign its theta-role to the matrix subject. In other words, what I am proposing is that not only may the empty-operator chain transfer its theta-role to the matrix subject, it must transfer its theta-role to the matrix subject if it can. *John* thus gets two theta-roles, and the structure is correctly ruled out.

(11) John is eager to find Mary

As a point of contrast, why is (11) grammatical, then? It is grammatical because there is only one theta-role being assigned to *John*. *Eager* has a theta-role to assign to its subject, and this is the one theta-role that *John* is assigned. In the lower CP, there is no A'-chain since the object of the verb *find* is an overt NP, namely, *Mary*. Since no A'-chain is created, none exists, and there is no possibility that a second theta-role will be transferred to the matrix subject, *John*.

So, instead of proposing a new stipulation that an ADJ like *eager* cannot subcategorize for an empty-operator A'-chain, the ungrammaticality of (9) can now be explained by the fact that the presence of an A'-chain would result in a theta criterion violation. The ungrammaticality is not explained by stipulating that *eager* cannot subcategorize for this A'-chain; rather, this ungrammaticality is explained by the fact that the presence of such a chain in an expression like (9) will always result in two theta-roles being assigned to the matrix subject. To summarize, I have proposed that the A'-chain theta-transfer analysis in classic GB theory is not only available to explain the grammaticality of *John is easy to find*, but results in a simpler explanation of the ungrammaticality of *John is eager to find*. Following this, if the theta-role transfer of the

A'-chain is available and not prohibited, it must assign its theta-features to the matrix subject.

This strong theta-transfer analysis makes certain predictions about the grammaticality of data involving degree ADVPs that I present below. Specifically, since I have proposed that theta-transfer must occur when it can, one would expect, all else equal, that any empty-operator chain in the derivation will transfer its theta-role to the matrix subject. To explore this further, let's look at cases that include degree adverbs.

2.3 Data involving degADVPs in GB – ADVP theta-transfer blocking hypothesis

- (12) a. These apples are too brown to eat.
b. John is too short to play basketball.

The degree adverb *too* in these examples is associated with an infinitival complement (Lasnik and Fiengo 1974). This can be deduced in (12), due to the lexical properties of the ADJs *brown* and *short*. Neither ADJ subcategorizes for its own nonfinite (infinitive) CP, as seen in (13):

- (13) a. * These apples are brown to eat
b. * John is short to play basketball

The natural conclusion, then, is that the CP is the complement of the degree adverb. The degree adverb and its complement comprise the degree adverb phrase, which modifies the adjective.

Let's turn to testing the strong theta-transfer analysis and the predictions about the grammaticality of the expressions in (12). Specifically, since I have proposed that theta-transfer must occur when it can, one would expect, all else equal, that any empty-operator chain in the derivation will transfer its theta-role to the matrix subject.

Consider (14) and (15):

(14) It is too rainy_{CP} [IP [PRO_{arb} to include the cat in the show]]

(15) *The cat_i is too rainy_{CP} [PRO_i IP [PRO_{arb} to include t_i in the show]]
|_____|

For (14) to be grammatical, no theta-role can be assigned to the matrix subject since pleonastic *it* is the matrix subject. If any theta-role is assigned to the matrix subject, (14) should be ungrammatical. The ADJ *rainy* has no theta-role to assign to its subject. Moreover, there is no A'-chain in (14). Thus, the matrix subject *it* receives no theta features, and (14) is grammatical.

In contrast to (14), (15) has an overt matrix subject that requires a theta-role. According to my argumentation in §2.2, the A'-chain that is present in CP must transfer its theta-features to the matrix subject if it can. So, the matrix subject should get one and only one theta-role, namely, the one that is transferred from the A'-chain, rendering the sentence grammatical.

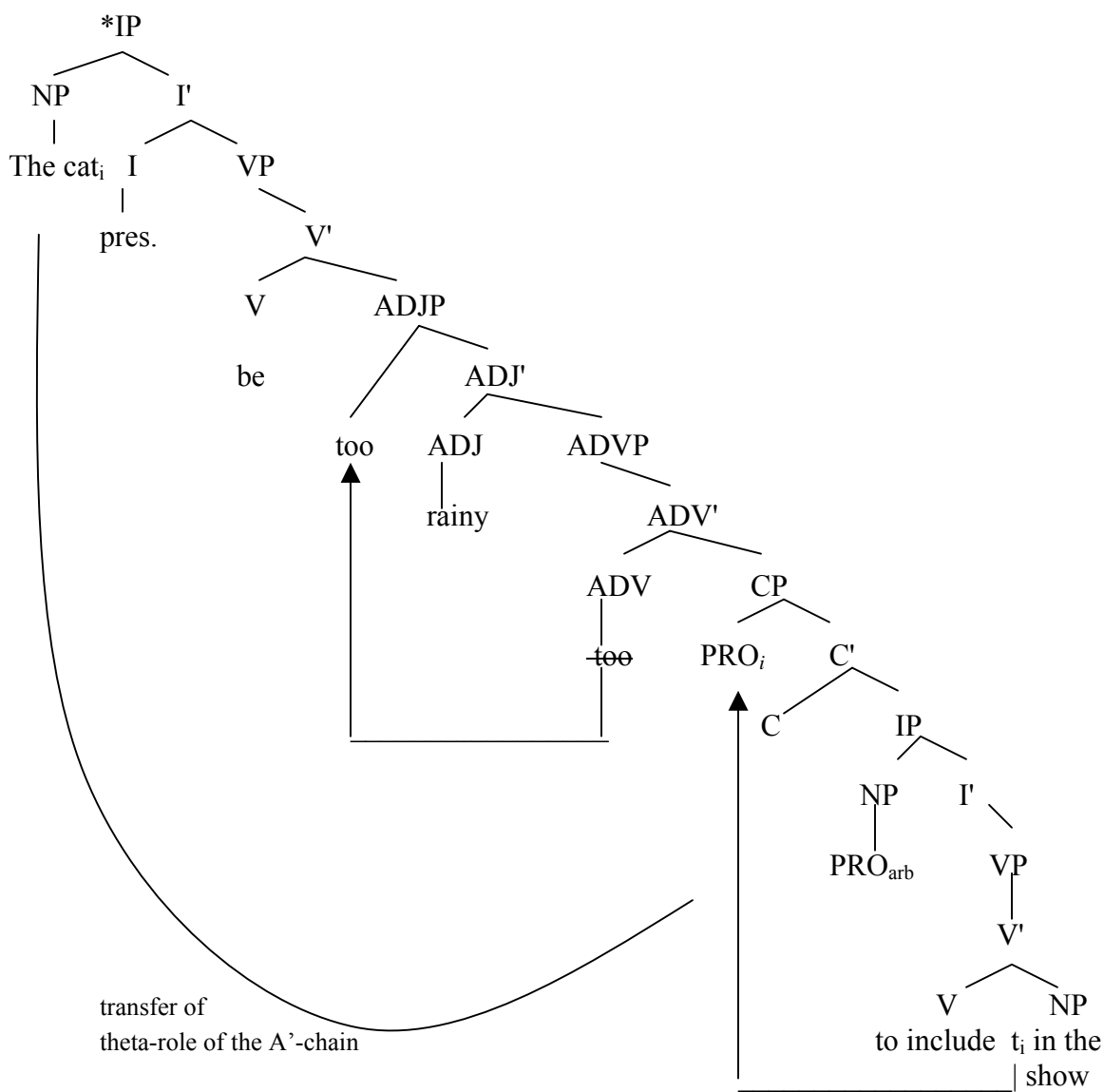
Surprisingly, (15) is not grammatical (on the reading derived from the DS in (15b)):

(15)b. DS IP [is too rainy_{CP} [IP [PRO_{arb} to include PRO_i in the show]]

According to the argumentation for *tough*-constructions in GB, a derivation wherein the matrix subject *the cat* would be inserted at some point after DS and simultaneously receive a theta-role from the A'-chain should be available. And the A'-chain in (15), I just argued, must transfer its theta-features to the matrix subject. This should result in no theta criterion violation because *the cat* would receive one theta-role from the A'-chain and none from the ADJ *rainy*. So, like a standard *tough*-construction, *rainy*'s lack of a theta-role to assign to its subject should not result in the ungrammatically

of this expression. The full derivation is shown below and will aid in showing the possibility of the theta-role transfer I have just described and, subsequently, why this expression should not be ungrammatical.

(16) Full derivation of (15)²



Yet, the expression is ungrammatical. This is not consistent with my theory of obligatory empty-operator theta-transfer. In reviewing these data in the GB framework, I

made the strong claim that if the A'-chain can transfer its theta-role to the matrix subject, then it must transfer its theta-role. Crucially, some structure in (15) must be preventing the theta-transfer. In (15), the A'-chain is dominated by the ADVP (see (16)). A natural hypothesis is that the ADVP is blocking the theta-transfer of the A'-chain to the matrix subject in this example.

To revise my hypothesis, then,

- (17) 1. If the (PRO, t) A'-chain can transfer its theta-role to the matrix subject, then it must transfer its theta-role to the matrix subject.
 2. However, if an A'-chain is dominated by a degree ADVP, the ADVP will block the theta-transfer of this chain to the matrix subject.

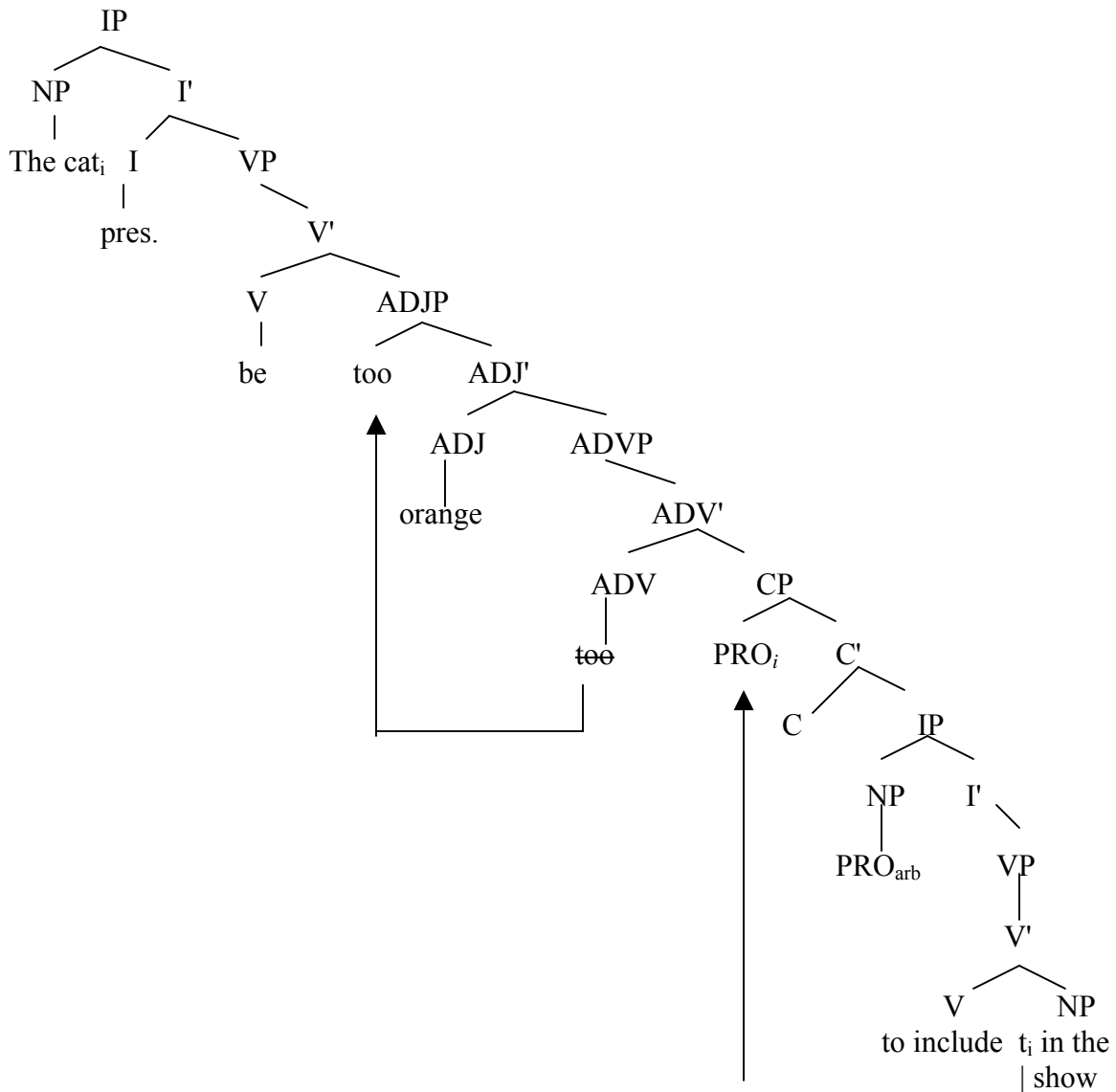
In short, the essential claim is that certain PRO chains create complex predicates (that is, they assign a theta-role to the matrix subject); and certain PRO chains (like those in adverb phrases) are not complex predicates; thus, they do not assign a theta-role³. If the A'-chain creates a complex predicate, it will and must transfer its theta-role to the matrix subject.

Consider next:

- (18) The cat_i is too orange_{ADVP} [CP [PRO_i IP [PRO_{arb} to include *t_i* in the show]]]

If the A'-chain theta-transfer is blocked by a dominating ADVP, then (18) should be grammatical, according to the following analysis: the ADJ *orange* assigns a theta-role to the matrix subject, satisfying the theta criterion. Since the A'-chain is dominated by the ADVP, it cannot transfer its theta-features to the matrix subject; thus, the final result is that *the cat* gets one and only one theta-role at LF, resulting in grammaticality of the expression. Indeed, this is exactly what happens, and the expression is well formed. See the full derivation in (19).

(19): Full derivation of (18)



To test this hypothesis fully, one must examine a larger data set in order to manipulate all the relevant variables in the expression. Those variables are (i) the theta-roles of the ADJ that must be assigned, (ii) the presence or absence of an A'-chain in the complement of the ADJ, and (iii) the presence or absence of an A'-chain in the complement of the degree ADV. With that goal in mind, I will now explore further data. Consider (20)-(22):

- (20) a. John is too happy to include in the show
 b. John is too blue to include in the show
 (21) *John is too easy to include in the show
 (22) *John is too rainy to include in the show

The ADJs in (20a) and (20b) (that is, *happy* and *blue*, respectively) assign a theta-role to the matrix subject (see 23):

- (23) a. John is happy
 b. The ball is blue

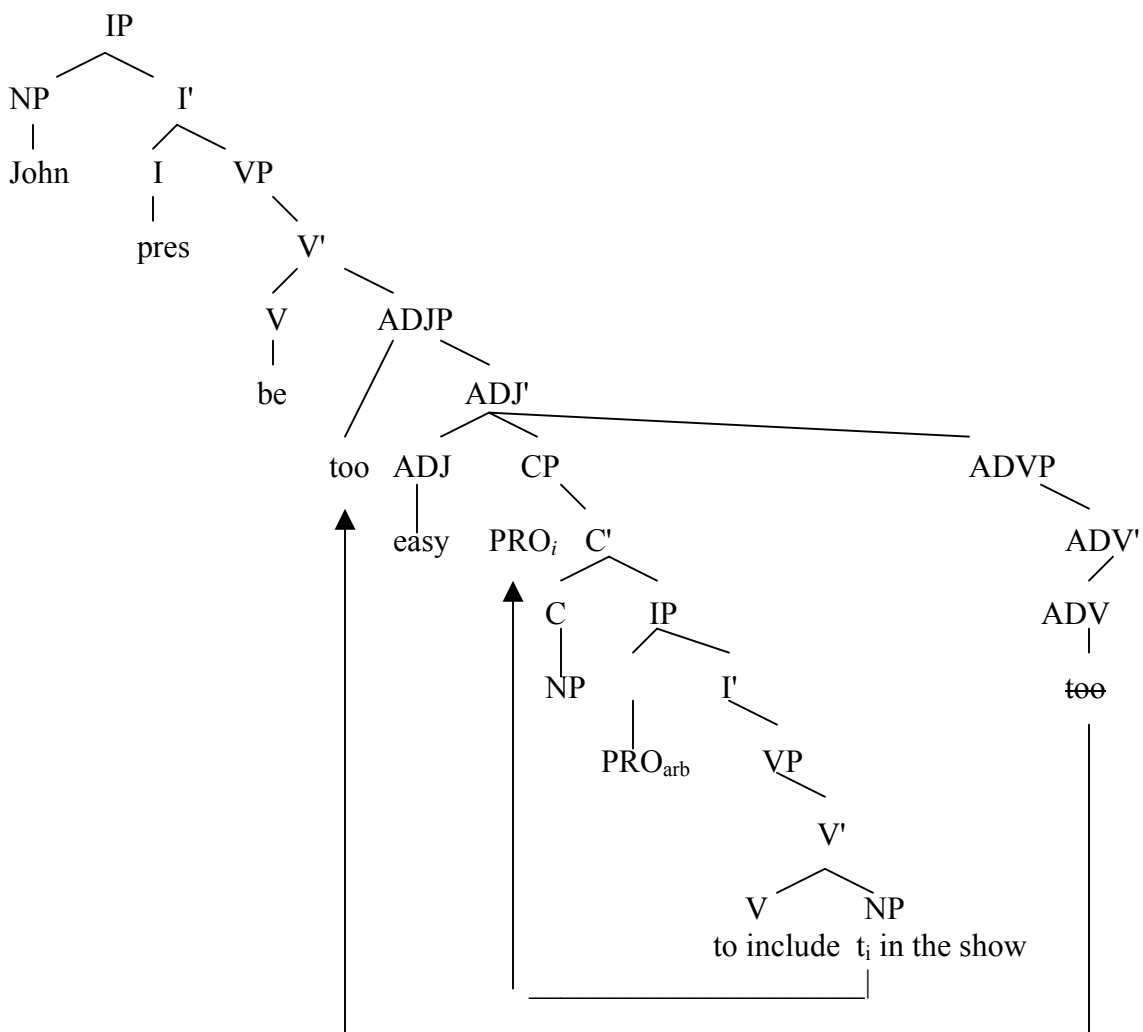
There is an A'-chain in the expression that could transfer its theta-role to the matrix subject. If this A'-chain transfers its theta-role to the matrix subject, the resulting expression will be ungrammatical. However, the A'-chain is dominated by an ADVP and, according to my hypothesis, the ADVP blocks any theta-transfer of the A'-chain in its CP. The results are grammatically correct then.

However, (21) and (22) are ungrammatical, due to a theta criterion violation if and only if the CP is the complement of the degree ADV. Both *easy* and *rainy* do not assign a theta-role to their subjects. Thus, unless the A'-chain in these examples transfers its theta-features to the matrix subject, the matrix subject will possess no theta-role and the derivation will crash.

We can independently determine that (22) should be ungrammatical under any reading according to my analysis. The ADJ *rainy* does not take its own complement and does not assign a theta-role to its subject. The CP, then, must be the complement of the degree ADV *too*. By hypothesis, the A'-chain will not be able to transfer its theta-role since it is governed by the ADVP. Thus, *John* will not receive any theta-role, leaving the entire expression ungrammatical.

In judging (21) to be ungrammatical, we must investigate the results carefully. As I stated previously, (21) is ungrammatical due to a theta criterion violation if and only if the CP is the complement of the degree ADV. If it is possible for the CP to arbitrarily be interpreted as the complement of either the ADJ or the degree ADV, then a grammatical interpretation of (21) should be available.

(24): Full derivation of (21) with the CP as the complement of the ADJ



The semantic interpretation of (21) on the derivation in figure C entails that the ADV *too* selects some CP that is not overtly expressed. Using entailment relationships, the syntactic structure can be determined:

On the reading of (21) in shown in (24), (21) must entail (21b):

(21)b. John_i is too easy_{ADJP} [CP [PRO_i [PRO_{arb} to include *t_i* in the show
]]]]
 ADVP [CP [IP [PRO_{arb} (to do something)]]]]

Also, there is an additional third reading available, that is, that *easy* assigns a theta-role to *John*. On this reading, however, the semantic value of *easy* changes radically, forcing the entailment of (21c):

(21)c. John is easy

Now the expression is no longer about the ease of including *John* in the show but rather about John's promiscuity somehow preventing him from being included in the show. The contrast between this reading and the ungrammatical reading in (21) lies in whether *easy* possesses a theta-role to assign to the matrix subject.

2.4 Further data supporting the ADVP blocking theta-transfer to the matrix subject

Next, I want to test my hypothesis (17) with the embedded CPs that I introduced in

Chapter 1 (Introduction):

(25) John is too hard for us to talk to for the producer to include in the show

(26) *John is too eager for us to talk to for the producer not to include in the show

According to my ADVP theta-transfer-blocking hypothesis, (25) should be grammatical.

In (25), there are two possible empty-operator chains that could transfer their theta-features to the matrix subject. The matrix subject needs to have one of the chains transfer theta-features since it receives none from the *tough*-type ADJ *hard*. But only one chain

Here, the sentence is ungrammatical because *John* has no theta-role. The ADJ *hard* has no theta-role to assign to the subject; there is no A'-chain in the CP of the ADJP since the object position is overtly filled. The A'-chain in the CP of the ADVP cannot transfer its theta-role to the matrix subject since it is blocked by the dominating ADVP.

To further illustrate the reliable nature of the theta-transfer-blocking capability of the ADVP, consider (28):

(28) John is too eager to talk to Mary for the producer not to include in the show

In (28), *eager* assigns a theta-role to the matrix subject. So, it is imperative that no A'-chain that exists in the sentence assign its theta-features to the matrix subject. Because the object *Mary* in the ADJP complement is overt, there is no A'-chain in this CP to transfer its theta-features to the matrix subject. The A'-chain dominated by the ADVP can't transfer its theta-features. Thus *John* gets one and only one theta-role, giving us a grammatical expression. This is exactly the result expected if the hypothesis is correct.

2.5 Summary

Assuming the principles and theories presented that comprise GB theory (Chomsky 1981) are sound, the analysis presented in this chapter (largely adopted from Chomsky with minor revisions on my part) correctly predicts the grammaticality judgments of the great body of data examined here. Although this might tempt the reader to believe that the work of this investigation is completed, the previous assertion rests on an important conditional: the assumption that GB theory is sound. *Tough*-constructions (along with other problematic data) ultimately cast serious doubts on the soundness of the very theoretical framework I rested heavily on in this chapter. Nonetheless, the results here raise an important point for any reanalysis of these data: If we theorize that portions of

the GB framework are not sound and should be reformulated, data that rest soundly on these portions of the theory need to be explained in the reanalysis with at least equal reliability. In the next chapter I will examine the problems that reside in GB theory as they specifically relate to *tough*-constructions, and ultimately tackle the task of reanalysis.

Notes

1. This is debatable because of evidence that Spec of *easy* is a theta-position – cf. Hornstein 2001, Chomsky 1981, Williams 1985, and many others. Evidence includes inability of objects of idioms to raise into this position, and “this exam is easy.” I present my own argument against Spec of *easy* being a theta-position in chapter 5.
2. I assume the degree adverb *too* always obligatorily moves to the lefthand Spec position of ADJ, giving the grammatical word order *too rainy*. This movement cannot be motivated by any existing conditions, yet English never permits *too* to follow the head of the ADJP. If a degree ADVP is base-generated as the righthand Spec of ADJ', the results are well formed and syntactically accurate.
3. One challenge for this hypothesis, ultimately, is to explain what happens to the theta-features of an A'-chain that do not transfer to a legitimate argument before LF. Theta-features not associated with an argument at LF are uninterpretable by the grammar. Thus, any expression with these features at LF will cause the derivation to crash. This is one of the fundamental questions regarding the theta criterion which the minimalist program seeks to resolve.

CHAPTER 3

PROBLEMS WITH THE ANALYSIS OF *TOUGH*-CONSTRUCTIONS WITHIN THE GB FRAMEWORK

3.1 Introduction

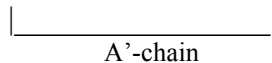
In the last chapter, the analysis of *tough*-constructions in GB was presented and certain modifications to it were proposed. With my modifications, the GB analysis rests upon the assumption that the theta criterion, specifically the portion stating that an argument may only receive one theta-role, is crucial. Related to this, an A'-chain must be created consisting of (PRO, t), assuming that PRO exists and that this chain must transfer its theta-role to a matrix subject unless it is dominated by an ADVP. However, this argumentation rests upon problematic premises that have been noted in the past. Specifically, the analysis of *tough*-constructions as presented in Chomsky (1981) and in chapter 2 of this thesis requires that the notion of DS as the level at which all theta-roles are assigned be abandoned. Primarily because of this shortcoming, this chapter will focus on the ways in which the argumentation in chapter 2 is not sufficient, motivating a reanalysis of the data under a different theoretical framework.

In chapter 2, I presented the following hypothesis:

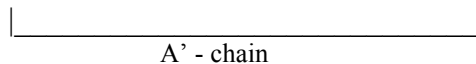
- (1) 1. If the (PRO, t) A'-chain can transfer its theta-role to the matrix subject, then it must transfer its theta-role to the matrix subject.
2. However, if an A'-chain is dominated by a degree ADVP, the ADVP will block the theta-transfer of this chain to the matrix subject.

The examples we saw of this in chapter 2 are repeated here for ease of reference. In (2), there are two empty-operator A'-chains, one in CP₁ and one in CP₂.

(2) John_i is too_{ADJP}[easy_{CP1}[PRO_i PRO_{arb} to find t_i]]



ADVP[t_{too} CP2[PRO_i PRO_{arb} to play hide-n-seek with t_i]]



The A'-chain in CP₁ can and must transfer its theta-role to the matrix subject, according to #1 of the hypothesis in (1). However, the transfer of the theta-role of the A'-chain in CP₂ is blocked since it is dominated by the ADVP node, according to #2 of the hypothesis in (1). This hypothesis rests crucially upon adherence of the theta criterion, that is, that each argument must receive one and only one theta-role. We will address the stipulative nature of this tenet later, but first let me note here what the theoretical consequences of such a strong tenet are. The null-operator PRO exists only to satisfy this requirement—that is, obligatory-control PRO is a nonphonetically realized argument that can bear a theta-role and must be co-indexed with its antecedent, a phonetically realized argument, through control. So, at LF a phonetically realized argument may be understood to be playing two semantic roles, but in order to satisfy the theta criterion, we must propose that the phonetically realized argument holds only one of the theta-roles and a null-operator co-indexed with that phonetically realized argument actually received one of the theta roles. If the soundness of the theta criterion can be questioned, the assumption that PRO exists and the assumption that control theory is needed must also be questioned. Most important to note in this chapter are that the elimination of the theta criterion and PRO necessarily nullifies any of the conclusions I made in chapter 2, as the hypothesis in (1) rests heavily upon these two theoretical bases.

3.2 Theta criterion

Chomsky (1981) stated that the matrix subject of a *tough*-construction cannot exist in the derivation at DS, as this would violate the portion of the theta criterion stating that all arguments must be assigned one and only one theta-role. It was also stated in *LGB* that a complex NP simply cannot be the matrix subject of a *tough*-construction. Thus, in (3), we simply have to stretch our theoretical machinery to accept that a lexical item can be inserted into a derivation after DS when a new theta-role assigner is created as a result of operations.

(3) John_i is easy [PRO_i [PRO_{arb} to please t_i]]
 $\overset{\wedge}{\text{-----}}$

In (3), PRO_i has moved from its base-generated position to SpecCP, creating an A'-chain that functions as a complex predicate and that must transfer the theta-role it bears. This “transferable” nature of the A'-chain’s theta-role did not exist before the movement operation creating the A'-chain; thus, the existence of a (ultimately) phonetically realized argument (such as *John*) at DS could not have been assigned a theta-role at DS. Yet, DS is theorized as the level at which all arguments are in their logical semantic positions (i.e., the level at which all theta-roles are assigned). This departure from a strict understanding of DS as the level at which all arguments are assigned theta-roles weakens the conceptualized importance of levels as where principles and filters apply. If it is not necessary for at least one theta-role to be assigned at DS (that is, the theta criterion does not strictly hold at DS for all arguments), why is it necessary for any theta-roles to be assigned at DS? The analysis of *tough*-constructions in Chomsky (1981), then, necessitates that there be at least two points in a derivation where theta-role assignment occurs.

More problematic to this line of argumentation is the observation that in fact, simple NPs are not the only arguments that could take the subject position of a *tough*-construction. It was noted by Lasnik (1988) that all manner of subjects are allowed in this subject position:

- (4) a. The boy who threw the ball is easy to dislike (complex NP)
 b. Sitting around on a lazy Sunday is hard to resist (nonfinite IP)
 c. Mary, who is easy to talk to, is hard to dislike (a *tough*-construction within a complex NP!)

Since these data exists, under the Chomsky (1981) analysis we now are required to postulate not only simple insertion of *John* (that is, simple NP-insertion) after DS for (3), but also insertion of *the boy who threw the ball* after DS for (4a) or insertion of *sitting around on a lazy Sunday* after DS for (4b). We will look closely at the consequences of (4c) in a moment, but let's concentrate on the problems (4a) and (4b) present first.

Within GB theory, a derivation after DS does not involve structure building. Presumably, a tree exists at DS with all its heads in X' frame. Yet, inserting a complex NP into subject position after DS creates a contradiction of this notion as a damning consequence for strict adherence to theta-role assignment solely at DS. The complex NP cannot exist at DS since there is no theta-role to assign to it. To have this argument exist at DS, therefore, would be a violation of the theta criterion at this level. This is identical to the phenomenon we saw in the derivation of a *tough*-construction involving only a simple NP as subject. Yet, within the complex NP, there are theta-role assigners and arguments that must be assigned theta-roles.

- (5) The boy who threw the ball

As observed by Kearney (cited in Lasnik & Uriagereka 1988, no reference given), in (5), *threw* must assign its external theta-role to *the boy* and its internal theta-role to *the ball*.

But since this complex NP couldn't have existed at DS, these theta-roles must be assigned at a point in the derivation after DS but before the entire tree is inserted into the matrix subject position. Then, once the complex NP (5) is inserted into the matrix subject position, the entire NP must be assigned a theta-role. Therefore, there are necessarily three points in the derivation at which theta-roles can and must be assigned.

When we consider a possible derivation of (4c), the recursive nature of language reveals just how deep a problem it is to postulate DS as the only level for theta-role assignment. We have a complex NP, with a *tough*-construction embedded within it, that must be inserted into the matrix subject position. Just as with (4a), theta-role assignment must occur at at least three points in the derivation, but now we add a fourth point at which this must happen: The complex NP, which must necessarily already be a tree when it enters the derivation, must not include the *wh*-element *who* because there is no theta-role to assign to *who* until the movement operation of PRO to Spec CP occurs.

(6) a. DS [IP is hard [CP [IP PRO_{arb} to dislike PRO_i]

b. A'-chain creation

[IP is hard [CP PRO_i [IP PRO_{arb} to dislike t_i]

^ _____ |

c. “*Mary...is easy to talk to*”-insertion

Mary [IP is easy [CP [IP PRO_{arb} to talk to PRO_i]]]

[IP is hard [CP PRO_i [IP PRO_{arb} to dislike t_i]

d. A'-chain creation

[_{IP} is easy [_{CP} PRO_i [_{IP} PRO_{arb} to talk to t'_i]]]

[_{IP} is hard [_{CP} PRO_i [_{IP} PRO_{arb} to dislike t_i]]]

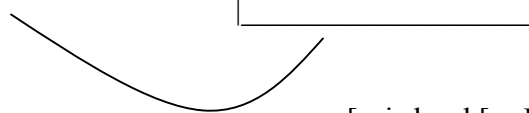
e. "who-insertion"

Mary [_{IP} who is easy [_{CP} PRO_i [_{IP} PRO_{arb} to talk to t'_i]]]

[_{IP} is hard [_{CP} PRO_i [_{IP} PRO_{arb} to dislike t_i]]]

f. Theta-role transfer from relative clause A'-chain to *who*

Mary_i [_{IP} who_i is easy [_{CP} PRO_i [_{IP} PRO_{arb} to talk to t'_i]]]



theta-role transfer

[_{IP} is hard [_{CP} PRO_i [_{IP} PRO_{arb} to dislike t_i]]]

g. Theta-role transfer from the lower A'-chain to *Mary*

[_{IP} Mary_i [_{CP} [_{IP} who_i is easy [_{CP} PRO_i [_{IP} PRO_{arb} to talk to t'_i]]]]]



theta-role transfer

There are several points that are problematic in this derivation. First, there are now necessarily four separate points in the derivation (6a, c, f, and g) at which theta-roles must be assigned. This begs the necessary question: Why is DS postulated as the level where all theta-roles must be assigned when we must make exceptions that are this grossly divergent from the norm? Secondly, there is a question as to whether the adjectival relative clause *who is easy to talk to* possesses a theta-role to assign. If it does, it is assigned to *Mary*. But *Mary* also must hold the theta-role transferred/assigned by the

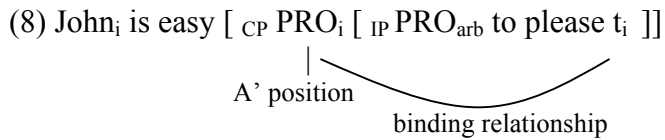
well as the possibility that such a movement sequence could result in a theta criterion violation, it was stipulated that such a movement sequence could never occur. In regard to the theta criterion, the possibility existed that if an argument moved through two distinct A-positions during the course of a derivation, then two distinct theta-roles could be assigned to that argument.

3.3.2 Binding theory C

If the derivation in (6) was not possible, due to a binding theory violation, some other derivation must be proposed to account for *tough*-constructions. Since the PRO theorem was shown to be necessary for satisfying the theta criterion and, therefore, a needed subtheorem within the larger GB framework, the question was raised: What is the feature composition of trace of PRO after it moves, and what binding principles apply to this trace? PRO held the feature composition [+anaphor, +pronominal], and it was argued to not be phonetically realized because of these properties. Therefore, there was not a corresponding overt pronoun to which binding principles applied that could also be applied to the trace of PRO. Brody (1993) observed (also noted by Chomsky, 1981), however, that the trace of PRO was a variable, just as a *wh*-trace would be. Variables, he argued, were r-expressions for the purposes of binding theory and thus were subject to binding condition C.

The proposed derivation of *tough*-constructions in Chomsky (1981, chapter 5), however, contradicts the operator-binding principles (that is, principle C) that he presents in *On Government and Binding* (chapter 3). He states that operator-binding is A'-binding. If, in the domain of an A'-binder, the trace of PRO is a variable, and as such it is subject to BT-C, then the proposed derivation of *tough*-constructions in Chomsky (1981) is a

violation of BT-C since the A'-trace in SpecCP of a *tough*-construction derivation binds this trace of PRO, a variable.



3.4 Larger theoretical problems with GB theory

I have just shown specific theory-internal problems with the analysis of *tough*-constructions in the GB framework (Chomsky 1981, and my own analysis in chapter 2). These problems focused primarily on theta theory and the level of DS as the level where thematic roles are assigned. Next, I will present a broader criticism of GB theory to motivate the reanalysis of the data under a different framework, namely, the minimalist program.¹ I will address the soundness of a theory that includes unnecessary levels since we have just seen, in the first portion of this chapter, a breakdown of at least one level's purpose (DS as the level at which thematic roles are assigned). Along these lines, I will focus on theta theory as a purely stipulative principle, and the postulation of such an independent theory required much more machinery to be developed to uphold it. Following this, I will address the empty-operator PRO and the PRO theorem as necessary only to satisfy the theta criterion. Lastly, I will address control theory as existing only to co-index those elements that should be targeted for elimination from the theory (null arguments).

3.4.1 Levels – DS

Within GB theory, DS is proposed as the level at which all thematic roles are assigned. As we saw in §3.2, though, *tough*-constructions require at least two different

points where theta roles must be assigned and potentially innumerable points, due to the recursive nature of language. The following issue was raised in that section: If there is not one level at which theta-roles are assigned, and additionally the entire tree of a structure is not built at a starting point, then why do we need DS? In scientific theorization, it is neither elegant nor reasonable to propose a principle or construct that is inessential to the workings of a theory. Similarly, it is chaos to propose a principle or construct with properties that hold only some of the time and with no explanation as to why or why not. Chomsky (1995, chapter 3) gave this and other reasons for abandoning the idea that the levels DS and SS are part of a scientific theory of syntax. My argumentation here focuses on the problems with DS not SS. To delve into the reasons for eliminating SS from syntactic theory would take me far outside of the main purpose of this thesis.

3.4.2 Theta theory

The theta criterion stipulates the following:

- (9)
 - a. All theta-roles must be assigned
 - b. Each theta-role may only be assigned once
 - c. Each argument must receive one and only one theta-role

The first two principles of the theta criterion, as stated in (9a) and (9b), follow from a logical understanding of predicate calculus semantics. A theta-role assigner has logical arguments that must operate according to the lexically predetermined roles that the assigner demands.

(10) Mary likes John

In (10), the verb *likes* needs a “like-er” (agent) and a “like-ee” (patient) to be semantically interpretable. The verb holds these two theta-roles and must assign them to

two distinct NPs (in this case, the internal theta-role could also have been assigned to a non-finite CP). This is simply the composition of the verb *like*.

(11) * Mary_i likes

For similar reasons, (11) is ungrammatical. It makes no sense for Mary to just “like.” She must like something. *Like* is never intransitive; it “needs” a “like-ee,” whether that is an NP or an IP. So, all of the theta-roles of the verb *like* must be assigned (this satisfies (9a)).

(12) *Mary likes the dog the cat

Here we see that not only does *like* need a “like-er” and a “like-ee,” it can only have one phrase playing each of these roles. So, in (12), Mary can like the dog or Mary can like the cat, but Mary cannot like the dog the cat unless they are in the same phrase—the dog *and* the cat. This demonstrates that (9b) follows logically from the semantics.

What is not necessarily clear is why an argument may only be assigned one theta-role. Consider the expression in (13):

(13) John wants to leave the party

In (13), *John* is clearly understood as the “want-er” and the “leave-er.” Yet, if we adhere to the portion of the theta criterion in (9c), we are prohibited from drawing the conclusion that the phonetically realized DP, *John*, is what has been assigned the agent theta-role of each of these predicates. But why this should be prohibited outside of the theory is unclear. I will remind the reader at this point that the analysis I presented under the GB framework in chapter 2 rested securely within a strict adherence to this last principle of the theta criterion. To question the soundness of the theta criterion forces that analysis to be reanalyzed under completely different assumptions.

The theta criterion as a set of principles that must arbitrarily hold at some level (DS) is questionable theoretically on two counts: (1) It is a set of principles that is stipulative, and (2) it is unclear why the proposed axiom that thematic relationships must be established at DS should be upheld within the theory. I have already shown in §3.2 and §3.4.2 that the second point here is not even consistently usable within the theory. The first point simply has no reason to hold except to provide theory-internal motivation for the empty-operator PRO.

3.4.3 The PRO theorem and control theory

It is argued that PRO holds the feature composition [+anaphor, +pronominal]. Due to this, the existence of PRO could fly in the face of binding theory. BT-A states that an anaphor must be bound in its local domain, and BT-B states that a pronoun must be free in its local domain. How then can one element be simultaneously free and bound in its local domain? PRO must be ungoverned (i.e., it has no local domain).

PRO exists to satisfy the theta criterion (an argument may hold only one theta-role). Let us consider the expression in (13), repeated here as (14) in light of the PRO theorem:

- (14) a. John wants to leave the party
 b. John_i wants PRO_i to leave the party

In (14b), we can now see that PRO is the subject of the lower IP and receives the external theta-role of the VP *to leave*. PRO sits in an ungoverned position (SpecIP), avoiding a binding violation. In fact, the only positions in which PRO may sit are SpecIP and Spec CP. And, as we will see in chapter IV, PRO has no reason to remain in Spec CP, and it is unclear why PRO can move to SpecCP in the first place. PRO, then, is an element that is theoretically postulated to exist to satisfy a portion of the theta criterion that is

questionable, and the usefulness of PRO is restricted to operating as the subject of a nontensed IP. The highly specific and stipulative nature of such an element should be suspicious to any sound theory.

The feature composition of PRO should be called into question as well. All lexical items should be interpretable at the interface level, LF and PF. PRO can be conceived of as simply LF uninterpretable due to its feature composition [+anaphor, +pronominal] (Seely 2002). The seemingly opposing features can be compared to a phone reaching PF with the features [+high, +low]. Such a phone would be simply unpronounceable (i.e., uninterpretable at the interface level PF). Unlike at PF, at LF we have no overt indication of how an element with the feature make-up of PRO would be interpreted. Yet, it is reasonable to question how such an element with conflicting features could ever be interpreted.

The theta criterion requires the existence of PRO. The existence of obligatory-control PRO in turn demands a theoretical explanation for how coreferencing is understood at LF. Control theory is now needed to explain how an overt lexical item is understood to be logically coreferent with PRO.

3.5 Summary

The argumentation here sets the stage for the departure from GB theory. Specifically, DS as a level, the theta criterion, the null operator PRO, and control theory are not sound tenets of a theory that strives to have simplicity and greater explanatory value. In the remainder of this thesis, I will strive to eliminate these portions of the theory as best possible and present a reanalysis of the data presented in chapter 2. It is essential at this point for me to point out the strong role that theta theory and the existence of PRO played

in my analysis of *tough*-constructions and of the new data that was presented in chapter 2. What I set up in that chapter was an analysis that works on the basis of a strong reliance upon shaky theoretical grounds. I have pointed out all the analysis-specific problems with chapter 2 (this I showed in §3.2 and §3.3) and then pointed out all the theory-internal problems with the framework (in §3.4). By doing so, I essentially have left the analysis in chapter 2 without any theoretical bolstering, forcing a reanalysis of the data under a different framework.

Notes:

1. This reanalysis will be presented in chapter 4 of this thesis.

CHAPTER 4

MINIMALISM I

4.1 Introduction

Up until this point, I have (hopefully) motivated the reader to understand the need for a reanalysis of standard *tough*-constructions and of the new data (*tough*-constructions involving degree ADVPs) under a framework much different than any analysis under the GB framework could allow. To this end, for the remainder of this thesis I will deal with these data under the tenets of the Minimalist Program. This leads to the fair question, what are the foundational tenets of minimalism? One guiding principle is to posit nothing beyond that which is absolutely ineliminable. Recently, following this principle has resulted in the radical elimination of rules and principles that formerly, under the GB framework, were considered to be fundamental. These rules and principles include but are not limited to binding theory (Chomsky 2001), control theory (Hornstein 2001), the theta criterion (Hornstein 2001), empty operators (Hornstein 2001), traces (Chomsky 1998; Nunes 1999), the Extended Projection Principle (EPP) (Epstein and Seely 1999), and phrase labels (Seely 2001; Collins 2002). The elimination of each of these individual rules and principles is argued for and supported within the tenets of the Minimalist Program. Yet, despite this, there exists much dispute over each of these specific eliminations. In such an atmosphere, it is essential to restate those tenets that motivate and guide all minimalist inquiry and then carefully identify any further assumptions I make beyond those generally accepted tenets.

4.2 Theoretical assumptions

In this subsection, I will lay out general guiding tenets assumed within the minimalist program (Chomsky, 1995) in pursuit of a simple theory. I follow this set of principles throughout my analysis. Secondly, I will introduce the additional minimalist tenets I have assumed within my analysis. These additional goals go beyond what is accepted as fundamental to the minimalist program. Thus, the burden of proof to justify these additional assumptions is upon me. I will attempt within my proposed analysis to do just that—justify the existence of the debated assertions I assume.

I appeal to the following guidelines in minimalism (Chomsky 1995):

- Posit as little as possible beyond ineliminable features of lexical items and what is required to satisfy the interface conditions. In other words, assume that all that exists necessarily are the interface levels LF and PF, and a lexicon.
- Economy—the most economic convergent derivation available is the one used.
- “A step in a derivation is legitimate only if it is necessary for convergence—had the step not been taken, the derivation would not have converged.” (p. 200)
- Last Resort principle—a step in a derivation may only be taken if it is necessary for convergence, and at the latest point in the derivation when it is necessary.
- Procrastinate principle—movement after Spell-Out is less costly than before Spell-Out (i.e., overt).
- Reject postulating new principles, rules or constraints.

In regards to the last guideline, I will not attempt here or elsewhere to eliminate the EPP.

Though its presence within the minimalist program is not theoretically ideal, it is nonetheless empirically motivated cross-linguistically and is well beyond the scope of my research. I assume that the necessary presence of expletives ("it" in these expressions) is necessary for no other reason but to satisfy the EPP. Until a better explanation is discovered, the data here must depend upon the EPP to explain the presence of matrix subjects which are not semantically contentful.

Beyond these accepted tenets, I will assume and support the following additional principles:

- Eliminate obligatory-control PRO and the necessity for control which this null operator creates (this follows closely Hornstein 2001).
- Necessary sideward movement – movement from one syntactic tree to another in the absence of any c-command relationship. This type of movement should be considered costly, though, and as such, a last resort.

4.3 Hornstein's analysis in *Move!*

4.3.1 Step-by-step review of the analysis

I will present in this section one analysis of *tough*-constructions in recent literature as a possibility for achieving the assumptions I listed in §4.2. As we will see, Hornstein's (2001) *Move! A Minimalist Theory of Construal* provides a promising analysis of *tough*-constructions that attempts to derive the effects of the control module for obligatory control from independently motivated properties of feature-driven (NP) movement. I will outline the analysis in *Move!* in this section, then present problems with the *Move!* analysis in §4.4. The problems I present rest primarily in Hornstein's assumption that free adjunction of a CP to an IP is allowed. Such freedom results in potentially problematic possible readings and derivations.

In *Move!*, Hornstein targets PRO and the control module for elimination. He argues that the effects of the control module for obligatory control can be derived from independently motivated properties of NP-movement. In chapter 2, it was noted that obligatory-control PRO and the control module played a key role in the GB analysis of *tough*-constructions. If obligatory-control PRO and the control module are eliminated, as proposed in *Move!*, then the GB analysis must be reformulated. And indeed *Move!*

proposes that like other obligatory-control domains, *tough*-constructions involve not control but, rather, NP-movement.

The basic idea is depicted in (1):

(1) John is John easy John pro to find John
 $\hat{\quad\quad\quad} | \hat{\quad\quad\quad\quad\quad} | \hat{\quad\quad\quad\quad\quad\quad\quad}$

To examine this proposed derivation in *Move!* in more detail, let's start with (2):

(2) John is easy to find

Assuming a bottom-up derivation, first the CP is built:

(3) [CP [IP pro to find [John]]

John then moves to spec of CP. I will address the reasons for this move in §5.3.4 and §5.5.1.

(4) [CP John [IP pro to find [John]]
 $\hat{\quad\quad\quad\quad\quad\quad\quad}$

Two noteworthy contrasts to the traditional GB analysis can be seen clearly here:

- The object of the verb *find* is *John*, not obligatory-control PRO
- PRO_{arb} (non-obligatory control), which has been traditionally assumed to be the subject of this IP, has been replaced with pro in the *Move!* analysis. I have nothing more to say about the pro subject; I adopt from Hornstein the idea that pro gets the arbitrary reading here.

Continuing with the derivation, *Move!* crucially assumes that the ADJ *easy* (which has not entered the derivation yet) has one and only one set of theta-features, namely, theme, which can be checked by only one argument. According to *Move!* the ADJ *easy* can check these theme features with either an IP or a DP, as evidenced by the examples in (5):

- (5) a. [DP the exam] is easy (evidence for *easy* checking with a DP)
 b. It is easy [IP pro to find John] (evidence for *easy* checking with an IP)

- (10) a. John is easy pro to steal books from ~~John~~
 b. John is easy pro to steal what from ~~John~~
 c. *What is John easy pro to steal ~~what~~ from ~~John~~

Because the CP is attached high, it is an adjunct, and wh-extraction out of that adjunct is by hypothesis disallowed. As we saw above, *John* was extracted out of the CP before it was an adjunct, so the sideward movement of *John* is licensed (in fact, any type of movement of *John* out of this eventual adjunct is licensed at this point). But the wh-movement in (10) occurs after the CP is attached as an adjunct, and thus, the wh-movement is disallowed.

A second reason the analysis in Hornstein (2001) is appealing is that it allows for an explanation as to why items like (11) are grammatical:

- (11) The exam was easy

Previously in the literature, it has been argued that Spec of a *tough*-ADJ can be a theta position (Williams 1983, and others). The most commonly cited evidence for this claim is the existence of expressions like (11). What I will argue here is that (11) is, in fact, not grammatical in the strictest sense. That is to say, if we strip away the commonly understood meaning that exams are things which are easy *to do something with*, the acceptability of (11) is lost.

First, I present a paradox. It is accepted by almost all English speakers that (11) is grammatical. Because *exam* needs a theta-role and *easy* is the only available item that could provide such a theta-role, we deduce that *easy*, in an expression like (11), must have a theta-role to assign to its subject (i.e., Spec of *easy* is a theta-position).¹ If this is true, though, it seems reasonable to deduce that any *tough*-ADJ could assign its theta-role to any subject.

- (12) a. *Alcohol is tough

- b. * The filing cabinet is easy
- c. * Mary's dress is difficult

We can see in (12) that this is not the case. If Spec of *easy* is a possible theta position, the sentences in (12) should all be grammatical. In fact, in the absence of another theta-role assigner, in the strictest sense we would expect that all the expressions in (12) must be grammatical. The *tough*-ADJ has a theta-role to assign, and the matrix subject must have a theta-role. Thus, we would expect that this operation will occur and the derivation will converge because the option of having *easy* assign its theta-role to the subject is available. Why aren't the expressions in (12) grammatical, then?

Let's assume, contra-*Move!*, that a *tough*-ADJ cannot assign its theta-role to the subject. In a moment, we will see that the strongest form of this assumption is to assume that a *tough*-ADJ must assign its one theta-role to a CP. But for now, let's concentrate on the idea that a *tough*-ADJ simply does not possess theta-features that can be checked with a DP/NP. If this is the case, the paradox discovered between (11) and (12) forces us to reexamine (11) (repeated here as (13)):

(13) The exam is easy

How is *exam* assigned a theta-role if *easy* has none to assign to it? Let's investigate what the results are if there is a covert CP that *the exam* has raised out of and then that CP was deleted as a result of a form of ellipsis.

(14) The exam is easy _{CP} [_{CP} ~~to X the exam~~]
[^] _____ |

Exam was assigned a theta-role by the verb X, then presumably raised through a series of movements to ultimately land in the matrix subject position. After this movement, the

entire CP was deleted, and we end up with the convergent expression in (13). There is one costly consequence to this movement sequence, however, as seen in (15):

(15) * John seems _{CP} [_# [John to sleep]]

^ _____ |

If raising a DP/NP out of a CP after it has received a theta-role is followed by allowed optional deletion of the CP, (15) should be grammatical. *John seems* is not a grammatical expression. As I stated above, I want to hold on to the strong hypothesis that a *tough*-ADJ must check its theta-features with a CP. If this is the case, then the movement illustrated in (14) is representative of the most plausible explanation for the derivation of (13). In fact, it may be the only available movement sequence for the expression in (13). This leads me back to my initial strong statement, that in the strictest sense, (13) is not grammatical.

(13) does not provide enough information to be understood conclusively. Unless the meaning of an elided CP is mutually understood, (13) is as ungrammatical as the expressions in (12). I use (16) to illustrate this:

(16) Mary – “Well, the exam was easy”
 Tom – “Oh, so you did well?”
 Mary – “No, I didn’t do well. I meant the exam was easy to take, not to pass!”

In the dialogue in (16), Mary interprets *the exam was easy* to mean the exam was easy to take and Tom interprets the expression *the exam was easy* to mean the exam was easy to pass. The expression, *the exam is easy*, is not idiomatic, it merely is used in a specific context widely enough that a commonly understood meaning has become associated with it, namely, that the exam is easy to do well on. But *the exam is easy* could just as well mean that the exam was easy to prepare, to photocopy, to cheat on, or to throw out the window. However, none of these plausible CPs are likely or implied when the expression

exists in the absence of a context. This answers the question posed previously about the obvious ungrammaticality of the expressions in (12) ((12a) repeated here as (17)):

(17) * Alcohol is tough

(17) is “more” ungrammatical than (13), *the exam is easy*, because there is no implied or mutually understood CP for the ADJ *tough* in this expression. When posing (17) to native speakers for judgment, a grammatical judgment was given tentatively, and the expression was only judged to be grammatical in a context in which it followed some discourse that provided the contextual and semantic cues to imply an appropriate CP. However, most speakers found this expression to be ungrammatical in isolation.

The reason that (15), *John seems*, is so unacceptable in contrast to *the exam is easy* or even to the examples in (12) is because *seems* leads to no semantic cues and suggests no mutually agreed upon CP in the domain of discourse. *Tough*-ADJs, along with a matrix subject, provide more salient semantic cues for a probable CP than the verb *seems* provides. I suggest, therefore, that the varying degrees of (un)grammaticality of (13), the expressions in (12), and (17) are the result of the degrading semantic context and probable CP that can be inferred within the domain of discourse.

Lastly, in support of high adjunction of the nonfinite CP, there are some constituency tests that suggest that “easy to X” is not a constituent in a traditional *tough*-construction (Jones 1985). If the CP is attached high to the matrix IP, this constituent is never encountered and the results of these tests are supported.

The examples used in Jones (1985) relate to complex adjective formation, which he borrows from Nanni (1980). Specifically, he stated that if a *tough*-ADJ and the following infinitive phrase are a constituent, this phrase constitutes a complex adjective

formation. However, Jones crucially stated that the complex adjective formation rule disallows any lexical item from intervening between the ADJ and the next *to*, and also disallows any lexical item from intervening between the verb in the IP and the initial position of the ultimate matrix subject. Both of these situations occur in *tough*-constructions in the case of adverbial modifiers of the infinitive VP (18a) and in the case of *for*-PP in the subject position of the IP (18b):

- (18) a. i. Clothes are hard to find ~~clothes~~ in the attic
 ii. * ...those hard to find in the attic clothes ...
 b. i. The test was easy for Bill to finish ~~the test~~.
 ii. * ...an easy for Bill to finish test...

In (18a.i), the adverbial *in the attic* intervenes between the infinitive VP and the initial position of *clothes*. In (18b.i), the PP *for Bill* intervenes between the ADJ and the first *to*. It was therefore concluded by Jones that “easy to X” is not a complex adjective formation and, therefore, not a constituent.

Accordingly, Jones (1985) argued that the CP is an adjunct rather than a complement of the *tough*-ADJ. His analysis differs from that in Hornstein (2001) in that Jones actually argued against the high attachment site (to the matrix IP) of the CP and instead argued that the CP is a specifier of the VP. Regardless, his argumentation for lack of constituency of “easy to X” is the evidence used to argue that the CP is an adjunct no matter where it is attached.

Although these constituency tests are intriguing and describe certain behaviors of *tough*-ADJs that are not discussed elsewhere in this thesis, their status within minimalism should be strongly questioned, as they are highly stipulative and highly descriptive. Jones (1985) stated, “Crucially, the complex adjective formation rule... refers to a string in which a missing object immediately follows the first verb following the first *to* after

the adjective. This is to prevent complex adjective formation of generally acceptable A-EI [tough-ADJs and an infinitive complement] strings in which the missing object is embedded in a complement of the main verb of the EI [infinitive IP]" (p. 171). To paraphrase, the complex adjective formation rule exists in the form it does in order to prevent the interpretation of *tough*-ADJs and the following infinitive IP as an ADJP.

Additionally, we will see in §4.4.2 that other, more standard constituency tests (movement, ellipsis/deletion, coordination) support the view that "easy to X" is in fact a constituent.

4.3.3 Summary of Hornstein (2001) analysis

The Hornstein (2001) analysis of *tough*-constructions, which was just reviewed, eliminates PRO and the control module from the syntax, as well as eliminates the need for A'-chains and the transfer of theta "roles" from such a chain to another A-expression. Each of these advances is desirable, as I stated earlier. There are problems with this analysis, however, which I will address next. Despite these problems, I underscore the following: If a way can be found to maintain the advances this analysis achieves while addressing the problems that I will identify, the result is preferred, as it continues to pursue minimalist methodology while increasing empirical coverage.

4.4 Problems with the Hornstein (2001) analysis

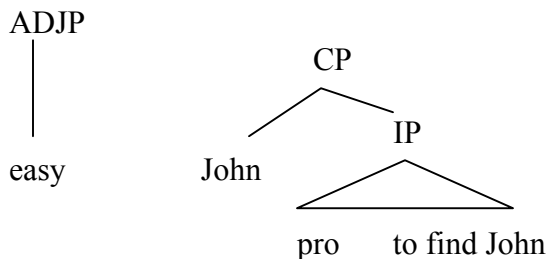
As we saw above, by treating what historically has been the complement of the *tough*-like ADJ as an adjunct of the entire IP, Hornstein accounted for the absence of wh-extraction. But I will now argue that it is precisely this high attachment that causes a variety of problems for the *Move!* analysis.

4.4.2 Constituency

As stated earlier, a crucial premise of *Move!* is that *easy* has one and only one set of theta-features to assign and that these can be checked with either a DP or an IP. In the derivation proposed in *Move!* for simple *tough*-constructions (shown in §4.3), this theme role is assigned to *John*. Making this distinction, however, results in the CP no longer being the complement of the ADJ *easy*. This implies that there is no direct syntactic (and thus, no semantic) relationship between *easy* and the IP [pro to find John]. Thus, the word sequence *easy to find John* is NOT a constituent under the *Move!* analysis.

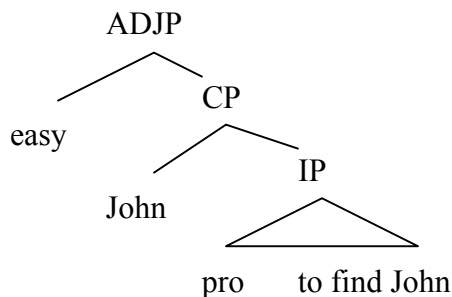
(19) *Move!* constituency:

[easy] [John [pro [to find John]]]



(20) traditional constituency:

[easy [John [pro [to find John]]]]



However, it can be shown that *easy to find John* (as in (20)) is in fact a constituent in the expression at hand:

- (21) a. Movement:
 I said that John is easy to find and [easy to find] he is ~~easy to find~~.
^
_____|
- b. Ellipsis/Deletion:
 John is easy to find, but Mary is not ~~easy to find~~
- c. Coordination:
 John is easy to find and hard to play hide-n-seek with

In (21a), movement of the constituent *easy to find* occurs in the coordinated predicate. In (21b), it can be seen that the entire constituent *easy to find* can be elided and is understood as the predicate of this coordinated IP and coindexed with the first instance of the ADJP in *John is easy to find*. Lastly, in (21c), the ADJP *easy to find* can be coordinated with another *tough*-ADJP, *hard to play hide-n-seek with*. These standard tests provide strong evidence that *easy to find* is a constituent in standard *tough*-constructions. There is no obvious way to account for this constituent according to the *Move!* analysis. I will show in the next section *Move!*'s proposal that the flexibility of a *tough*-type ADJ (*easy* in these examples) to check its theta-features optionally with a DP or a CP will result in overgeneration. If this ADJ is never given this flexibility and is defined in the lexicon as having theta-features that can only be checked with a CP, we will never encounter the constituency problems presented above.

4.4.3 Subcategorization frames

It is not yet clearly established what the status of subcategorization frames is within minimalism. Also, *Move!* does not address subcategorization frames directly. However, there is a consequence to the proposed high attachment of the CP to the IP. If the CP is attached high as an adjunct to the main IP, there no item that selects this CP (i.e., this CP is subcategorized for by nothing). Although this does not produce an

ungrammatical expression in a simple *tough*-construction, this freedom will overgenerate a host of sentences. Essentially, if the main IP in *John is easy* is a completely saturated expression (which it is under the *Move!* analysis) and this completely saturated expression can allow an adjunct to be freely attached, then each expression in (22) can be derived convergently according to *Move!*:

- (22) a. *These apples are brown to eat
 b. *John is eager to talk to
 c. *Bill is easy to talk to Mary

Under the analysis in *Move!*, all the expressions in (22) can have precisely the same derivation as that for *John is easy to find*. I will show the derivation as it applies to (22a). However, the same derivation can be used to produce all of the expressions in (22). If the proposed derivation of *tough*-constructions were extended to apply in these examples, one could argue that *brown* in (22a) has one set of theta-features that could be checked with either a D/NP or a CP. All else being equal, if one adopts *Move!*'s premise that *tough*-type ADJs have the option of checking their one set of theta-features with either a DP or a CP (that is, that *easy* can either check its theta-features with a DP or with a CP), it is difficult to argue why any ADJ should not have this flexibility. If *brown* had this option, however, (22a) should be grammatical, as seen in (24):

- (23) John is easy to find

[[_{IP} John is [_{AP} John easy]] [_{CP} [[WH] John] [_{IP} pro to find [[WH] John]]]]]

- (24) *These apples are brown to eat

[[_{IP} these apples are [_{AP} these apples brown]] [_{CP} [[WH] these apples] [_{IP} pro to eat [[WH] these apples]]]]]

The derivation of (24) is as follows: *these apples* and *eat* merge, checking the internal theta-features of *eat*. I is then merged with this tree to create *to eat these apples*. *pro* is

merged in to satisfy the EPP and the theta-features of *eat*; then, *these apples*, according to *Move!*, raises to spec CP to check the WH features² of this position. We then have the CP in (25):

(25) [_{CP} these apples [_{IP} pro to eat these apples]]

Brown can then be selected from the array and merged with *these apples* (sideward movement) in order to optionally check the theta-features of *brown* with a DP (instead of with a CP). Then, this tree merges with *be* and I, and *these apples* raises to spec IP to satisfy the EPP and check case features. Finally, the CP (in (25)) is attached high as the sister to the entire IP as an adjunct, and the expression is derived (as shown in (26)) without any apparent violations.

(26) [[these apples [are be [these apples brown]]] [these apples [pro [to eat these apples]]]]

Obviously, this is not the outcome desired, and another derivation must be proposed for the ungrammaticality of (24). (24) could be ruled out as ungrammatical on grounds outside of syntax, that it is “semantically uninterpretable” (personal correspondence, Hornstein 2002). This would mean that the derivation doesn’t crash; there simply is no way to understand how the brown-ness of an apple has anything to do with its edible qualities. What I hope to show below within my own analysis, however, is that (24) can be ruled out because the derivation of such an expression would violate the subcategorization frames of the *tough*-ADJ.

There is another severe consequence for the complete loss of subcategorization frames following the *Move!* proposal of free adjunction of a CP to an IP. If this loss of constraint on subcategorization frames is allowed, there then remains no explanation for the contrast between *tough*-ADJs and ADJs like *eager*. The examples in (27)–(30) are

reproduced from chapter 2 (examples (2)–(5)) to demonstrate the complementary distribution of the syntactic behavior of the ADJs *easy* and *eager*.

- (27) a. *John_i is easy PRO_i to please
 b. John_i is eager PRO_i to please
- (28) a. John is easy PRO_{arb} to please _____
 ^ _____|
 b. *John is eager PRO_{arb} to please _____
 ^ _____|
- (29) a. It is easy to please John
 b. *It is eager to please John
- (30) a. *John is easy to please Mary
 b. John is eager to please Mary

Under the analysis presented in chapter 2, this distinction rested in the theta-criterion. *Eager* has a theta-role to assign to the matrix subject and the matrix subject (an argument) can only receive one theta-role. If a theta-role from an A'-chain were transferred to the matrix subject in an expression containing *eager*, the result would be ungrammatical, due to a theta criterion violation. But we dismissed this portion of the theta-criterion in chapter 3 as stipulative and unnecessary. The question then arises, how can the contrast between *easy* and *eager* be explained? This contrast can be explained (and has been explained in the past (see Chomsky 1977, 1981, 1982)) as a contrast of the necessary subcategorization frames of *easy* and *eager*. Previously it was theorized that the ADJ *eager* could not subcategorize for a CP that contained an empty-operator chain. Since I am striving (following Hornstein) to eliminate empty operators, I will propose a simpler subcategorization hypothesis.

- (31) John is eager ~~John~~ to sleep
 ^ _____|

(32) John is easy_{CP}[~~John~~_{IP}[pro to please ~~John~~]
 $\overset{\wedge}{\text{—————}} \quad \overset{\wedge}{\text{—————}} \quad |$

The expression in (31) contrasts with that in (28) in this way: In (31), the CP subcategorized for by the ADJ must contain a subject that will raise to the matrix subject position. This is similar to the subcategorization frames of verbs like *seem*, *want*, and *try*³:

- (33) a. John seems_{CP}[to be happy]
 b. John seems_{CP}[John/*pro to be happy]
 (34) a. John wants_{CP}[to be happy]
 b. John wants_{CP}[John/*pro to be happy]
 (35) a. John tries_{CP}[to be happy]
 b. John tries_{CP}[John/*pro to be happy]

Although this is still stipulative, it remains to be seen how any distinction between the two types of ADJs could be achieved under the current framework without some type of subcategorization frames. For now I will continue with problems with the Hornstein (2001) analysis.

4.4.4 Impossible derivation

As we just saw, the analysis in Hornstein (2001) does not account for demonstrated constituency and observed subcategorization frames in traditional *tough*-constructions. In addition to these problems, the new data involving *tough*-constructions and ADVP (introduced in this thesis and treated in chapter 2 here) also present a serious issue for the analysis in Hornstein (2001). If the new data are tested using the diagnostics used for why the infinitive CP in a traditional *tough*-construction should be considered an adjunct (these are presented in chapter 3 of *Move!*), the corresponding infinitive CP in the new data should also be considered an adjunct. However, what we find is that if the infinitive CP is an adjunct to the matrix IP, derivation of the new data is problematic.

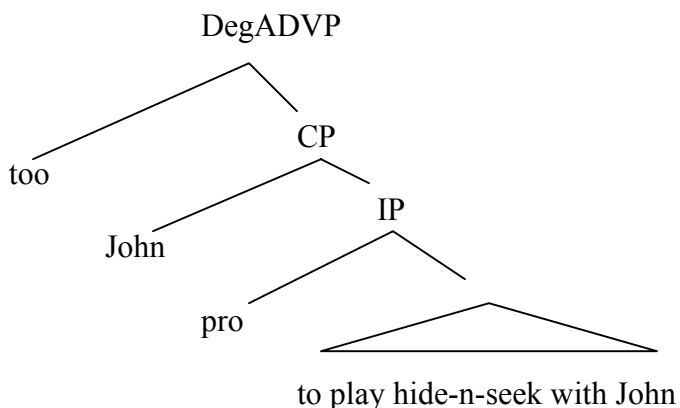
Up until now, we have briefly looked at the new data, using it only as a diagnostic for the “ADVP theta-transfer blocking hypothesis” presented in chapter 2. It is appropriate at this point to closely examine the structure of the degree ADVP and its relation to the *tough*-ADJ. Then, I will closely examine how the new data might be derived under minimalist tenets. Consider (36):

- (36) a. *John is slow to play hide-n-seek with
b. John is too slow to play hide-n-seek with.

As we saw earlier in chapter 2, the DegADV *too* in expressions like (36b) is associated with (i.e., is the sister to) the infinitive CP. In (36), *to play hide-n-seek with* is NOT the complement of *slow*. This can be seen clearly in (36a). The ADJ *slow* does not subcategorize for its own CP. Said differently, *slow* does not have theta-features that can be checked with a CP. What we have in (36b), then, is a DegADVP, namely, "too (for us) to play hide-n-seek with John" modifying the adjective *slow*.

The structure of the DegADVP in (34b) is informally represented in (37):

- (37) [too [John [pro to play hide-n-seek with John]]]



Just as a degree adverb must modify an adjective, a degree ADVP must modify an adjective, or an ADJP.

- (38) John is_{ADJP}[_{ADVP}[very] slow]
 (39) John is_{ADJP}[_{ADVP}[too_{CP}[pro to play hide-n-seek with John]]] slow]

In (38), the degree adverb *very* is modifying the ADJ *slow*. *Very* and *slow* have merged to create the larger ADJP *very slow*. In the same way, in (39), the degree ADVP is modifying the ADJ *slow*. The ADVP and the ADJ have merged to create a larger ADJP, *too to play hide-n-seek with slow*. Of course, the correct word order has not yet been achieved, but the point of illustration here is to demonstrate that a degree ADVP syntactically behaves very similarly to simple degree adverbs. We can now see the beginning steps of how the new data introduced in this thesis are derived. The degree ADVP in the new data is modifying the *tough*-ADJ, creating a larger ADJP.

Obviously, since this thesis is the first treatment of *tough*-constructions involving degree ADVPs, *Move!* does not deal with these data at all. Consequently, I will show here that the new data possess the same observable behavior as simple *tough*-constructions that are relevant to the *Move!* analysis.

In (40), just as we have seen before, a DegADV that may take its own CP complement (that is, a DegADVP) can modify an adjective like *easy* in a traditional *tough*-construction:

- (40) John is too easy to find to play hide-n-seek with

The interpretation of (40) is as follows: It is too easy (for us) to find John (for us) to play hide-n-seek with John. That is, the subject of each infinitive CP is *pro* and gets an arbitrary reading here. The understood object of both infinitive CPs must be *John*, which is the matrix subject.

Why should these data matter to the *Move!* analysis of *tough*-constructions? Just as in the simple *tough*-constructions, note that a *wh*-phrase still cannot be extracted out of this type of structure:

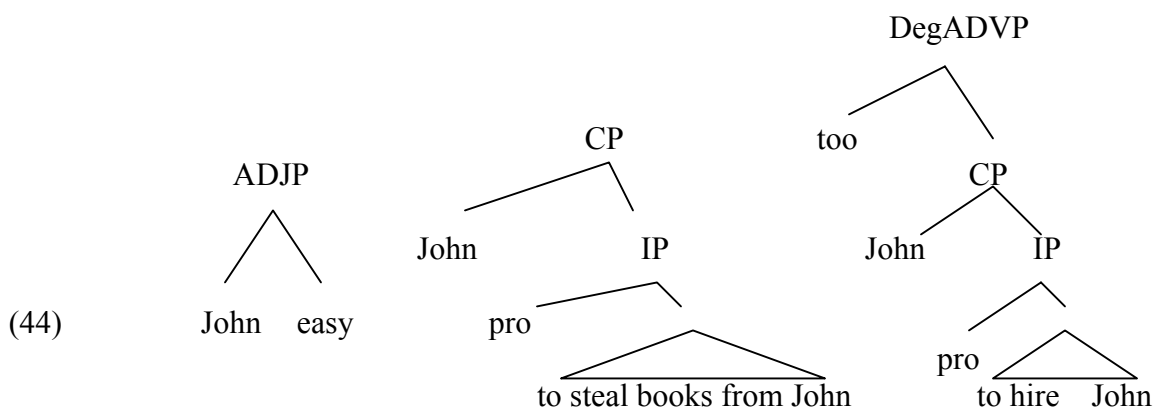
- (41) a. John is too easy to steal books from to hire (as the librarian)
 b. John is too [easy] [to steal what from ~~John~~] [pro to hire ~~John~~]
 c. *What is John too easy to steal ~~what~~ from ~~John~~ pro to hire ~~John~~
 d. *"What is John too easy to steal from to hire?"

This is identical to the limitation noted in *Move!* in simple *tough*-constructions and which I demonstrated in (10) (repeated here as (42)):

- (42) a. John is easy pro to steal books from ~~John~~
 b. John is easy pro to steal what from ~~John~~
 c. *What is John easy pro to steal ~~what~~ from ~~John~~
 d. *"What is John easy to steal from"

This limitation on *wh*-extraction is explained according to *Move!*, by the CP being an adjunct. That is, by hypothesis extraction out of an adjunct is disallowed. Following this, then, for *Move!* the CP [pro to steal what from John] must be attached high as an adjunct not only in the simple *tough*-construction but also in the new data involving *tough*-construction, as in (43). However, if high attachment of this CP is necessary, the derivation of (43) will not be possible.

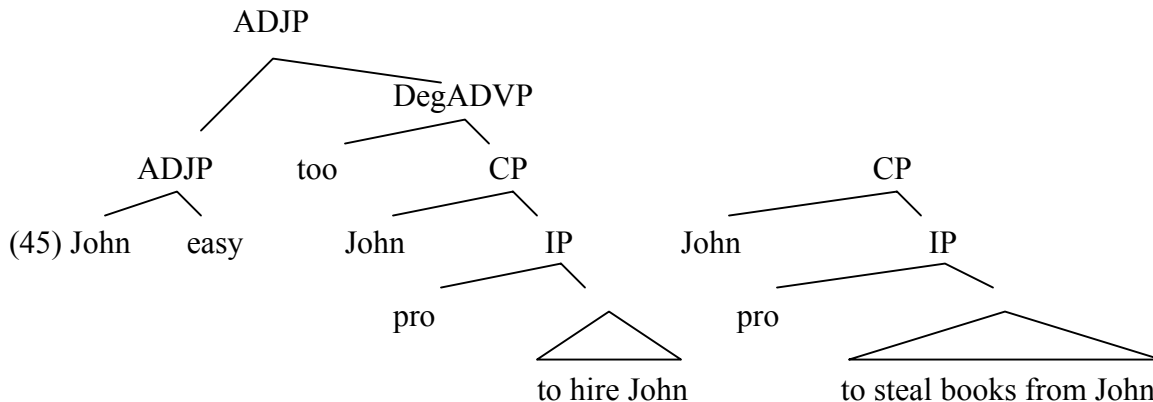
- (43) John is too easy to steal books from to hire



The first steps of this derivation are the building of the Deg ADVP and the (eventual) adjunct CP. The adjunct CP is built exactly as was seen in §4.3.1, (3)–(4), according to *Move!*. The DegADVP is built similarly, with the exception of the final Merge of *too* with the CP, establishing sisterhood. The ADJP [John easy] is formed by sideward moving *John* from one of these CPs and merging with *easy* for theta checking. I will address in the next chapter (5) whether *John* begins first in the DegADVP, then sideward moves to the adjunct CP or whether *John* begins in the adjunct CP before it sideward moves to the ADJP. The problems for this derivation will be encountered regardless of which sequence is followed, however, so I will skip discussion of this until chapter 5.

Under natural assumptions, a CP may be a complement or, as *Move!* argues, an adjunct to an IP. The CP cannot be freely attached as a specifier of an ADJP, as this would be semantically uninterpretable (since the CP is not an adverbial modifier of the adjective). Rather, an ADV, or in this case, an ADVP, should be a specifier, as it does modify the ADJP. Under these assumptions, then, if the CP [John [pro [to steal books from]]] is not the complement of *easy*, it cannot be part of this ADJP. Since *easy* already has checked its theta-features with *John*, the CP cannot be the complement of *easy*. And in fact, *Move!* does not want the CP to be the complement of *easy*, as this would contradict the fundamental argument of *Move!* that wh-extraction out of this CP is disallowed.

The DegADVP should merge with the ADJP here to modify the ADJP.



Once the ADJP is built, there is no position that the CP can take as part of the ADJP, and the target expression cannot be derived. Note also that if the CP is attached high as an adjunct now, the correct word order cannot be achieved.

4.4.5 Summary of problems with Hornstein (2001)

Due to *Move!*'s proposed high attachment of the lower CP, the following problems are encountered:

- Loss of demonstrated constituency
- Loss of necessary subcategorization (selectional) frames
- Impossible derivation (when new data are taken into account)

Taken alone, any one of these problems could be enough to reconsider the analysis presented in *Move!*. Together, they constitute a strong argument against concluding that the infinitive CP with a traditional *tough*-construction (and the corresponding CP within the new data) is an adjunct, regardless of its attachment site.

4.5 Summary

The analysis of *tough*-constructions presented in Hornstein (2001), although attempting to eliminate unnecessary machinery in the syntax (PRO and the control module), fails in

achieving this goal. The analysis, if followed strictly, results in a myriad of problems, as demonstrated in this chapter. Furthermore, the *Move!* analysis is inadequate in dealing with the new data (*tough*-constructions involving degree ADVPs) and renders these expressions underivable. Despite these shortcomings, the analysis presents an interesting challenge that I will take up in the next chapter. Can a construal-as-movement analysis of *tough*-constructions that successfully eliminates PRO and the control module from the theory be proposed? I will attempt just that in chapter 5.

Notes:

1. For the ease of exposition here, I will refer to items as theta-role assigners, or being assigned theta-roles. Despite this, my analysis later in this chapter and in the following chapter treats theta-roles as features that must be checked.
2. This WH feature was proposed by Hornstein in *Move!*, and I argue against this stipulative feature later in this chapter.
3. Interestingly, the corresponding constructions relating to *tough*-ADJs in English do not exist. That is, English contains no verbs that subcategorize for a CP and allow the object of that CP to raise to matrix subject position.

CHAPTER 5

MINIMALISM II

5.1 Introduction

The analysis of *tough*-constructions in Hornstein (2001) contributes significantly to the theory by replacing the rules of construal with a movement analysis, eliminating the category PRO and the control module from the syntax. This elimination of extraneous mechanisms is a prime example of minimalist methodology. The construal-as-movement analysis in *Move!* also provides an explanation for why the matrix subject and the understood object of the CP are coreferential: The same DP/NP occupied both of these positions during the course of the derivation. That is, the matrix subject originated in the object position of the CP and ultimately landed in the matrix Spec IP; thus, the matrix subject is understood both as the matrix subject and the logical object of the infinitive CP. The construal-as-movement analysis in Hornstein (2001), however, is problematic with regard to constituency, loss of needed subcategorization frames, and problematic derivation of the new data (*tough*-constructions involving degree ADVPs). Can we maintain the advantages of the *Move!* analysis while solving the problems raised above? In this chapter I will present my own analysis, a revision of the construal-as-movement analysis of Hornstein (2001) in which I strive to do just that.

I will also show in this chapter an unexpected characteristic of the new data (*tough*-constructions involving degree ADVPs): These expressions behave like parasitic gap constructions. The analysis in this chapter provides an explanation for this phenomenon in the new data. Though it is beyond the goals of this thesis, the

explanation for the parasitic gap-type behavior of the new data may be extended to provide an explanation for the behavior of traditional parasitic gaps constructions.

The analysis presented in this chapter assumes sideward movement. Sideward movement, that is, movement of a lexical item from one syntactic tree into another without any c-command relationship between them, requires the abandonment of the Probe-Goal analysis (Chomsky, 2000) as necessary for any and all movement since sideward movement necessarily requires that an object be selected for movement without any relevant relation of locality or dominance. The freedom of when sideward movement may apply must be constrained, however. The consequence of adopting sideward movement in any situation is that such freedom of movement of any item to anywhere would result in gross overgeneration. I will illustrate such examples in this chapter. Consequently, sideward movement is adopted within my analysis but is classified as very costly. Indeed, sideward movement must be considered a last option for convergence of an expression to be achieved. If sideward movement is never allowed under any circumstances, any derivation of *tough*-constructions with degree ADVPs (the new data described throughout this thesis) would require (what I consider to be) more serious violations of commonly accepted tenets than sideward movement necessarily assumes.

Lastly in this chapter, I will raise questions that are left largely unanswered by this analysis or by any other current research, as far as I know. These include speculation regarding (1) why movement of a *wh*-phrase or any object moving out of a CP must first pass through Spec CP and (2) what could limit sideward movement to prevent overgeneration.

d. *It is easy to find he

In (2), the case features are easy to identify because they are phonetically realized. In the cases of (2c) and (2d), there is definitely a crash at PF. Yet, if this overt PF representation of case were absent, it would be difficult to determine these case features. For instance, if the NP were an r-expression or a complex NP without overt case features, the convergent reading would interfere significantly with grammaticality judgments.

- (3) a. Bill is easy to find
b. It is easy to find Bill

In (3), it cannot be determined what case features *Bill* is assigned at PF or LF. *Bill* has no overt phonological features that indicate case features at PF, and case features are interpretable only at PF and thus are not detectible after Spell-Out (i.e., ultimately LF). I assume, then, that if an object has raised to the matrix subject position (as in (2a) and (3a), it must have been picked from the lexicon with +nom features and must be moving to check these features. Alternatively, in expressions like (2b) and (3b), the object holds +acc case features and is prohibited from movement since this movement is not necessary for convergence at PF or LF. Since case has no meaning, the difference between (2a) and (2b) and the difference between (3a) and (3b) are clearly phonetic, and there is not necessarily any other perceptible difference.

Under my analysis, the derivation of (1b) proceeds in this way:

The CP is built as before in the *Move!* analysis:

- (4) [_{CP} [_{IP} pro to find [John]]

John may bear the case feature [+nom]. These case features cannot be checked within the CP as it exists (i.e., there is no position within the CP at which the case features [+nom] can be checked). Since these case features must be checked eventually if they are

ever to reach a convergent derivation, *John* must move out of its present position, seeking a position to check these case features. Crucially, at this point in the derivation, *John* moves to SpecCP for no other reason except to eventually move out of the CP altogether. No feature appears to be checked in SpecCP. Even more interesting, no position exists in this or any other tree in the derivation thus far where these case features can be checked. Consequently, even if lookahead is assumed, there is nothing to lookahead to at this point in the derivation.

In other words, *John* moves to SpecCP at this point not to check any feature in that position but to facilitate checking a feature that must be checked eventually. If *John* doesn't raise at least to SpecCP at this point, the derivation will never converge,¹ and the final expression will never be reached. Both my analysis here and the Hornstein (2001) analysis assume this gratuitous movement of the object in the infinitive CP to SpecCP. The contrast between my analysis here and the analysis in Hornstein (2001) is that the analysis in *Move!* characterizes this movement as necessary by inserting a +WH feature that must be checked with a +WH lexical item.² This +WH feature is likened to whatever feature is checked by the complementizer in a relative clause:

(5) The musician_{CP}[[^]who_{IP}[I saw ~~who~~]] yesterday played sonatas

In (5), *who* must raise to SpecCP, creating the relative clause *who I saw*, which modifies *the musician*. It is hypothesized both that this movement is necessary because the *wh*-phrase holds some feature (+WH) that must be checked and that SpecCP is a position in which this can be checked. Hornstein (2001) expanded this reasoning to explain the movement of a DP in a *tough*-construction to SpecCP. For example, in (6), *this violin* possesses +WH features that must be checked in SpecCP:

(10) [_{ADJP} easy [_{CP} [John [_{IP} pro to find [John]]]]]

From this point, the matrix IP is built. V is merged with the ADJP, and then I is merged in.

(11) [_{IP} is [_{AP} easy [_{CP} [John [_{IP} pro to find [John]]]]]]]

The presence of the I node requires that *John* raise to Spec IP to check phi-features and the unchecked +nom feature. Once this movement occurs, all features have been checked and the derivation converges.

(12) [_{IP} John is [_{AP} easy [_{CP} [John [_{IP} pro to find [John]]]]]]]

To give a complete picture of this analysis and the crucial nature of case as a motivation for movement, consider the derivation of (2b):

(2b) *reproduced* It is easy to find him

Here, we select *him* and *find* from the array and merge them, checking the patient theta-features of *find* and the +acc case feature that *find* must check with some matching argument. *Him* holds this +acc case feature and checks it in this object position.³

(13) [_{VP} find him]

The rest of the CP is built:

(14) [_{CP} [_{IP} pro to [_{VP} find him]]]]

Him has no reason to move in this derivation because it bears no other case features that must be checked. *Easy* is selected from the array and merges with the CP to check its theta-features of theme.

(15) [_{ADJP} easy [_{CP} [_{IP} pro to [_{VP} find him]]]]]]

At this point, the rest of the matrix clause is built, with the insertion of “it” as the matrix subject, matching the number (singular) phi-features with I.

(16) [_{IP} it [_{VP} is [_{ADJP} easy [_{CP} [_{IP} pro to [_{VP} find him]]]]]]]]

In §5.3.3, it was noted that a completely saturated IP like (18) does not select a CP as its sister. According to my analysis, therefore, (19) is ruled out because neither the matrix IP nor the ADJ *brown* can subcategorize for a CP. But the grammatical *tough*-construction is allowed because a *tough*-ADJ must select a CP as a complement.

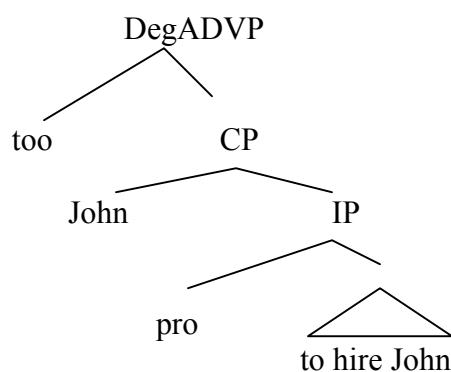
5.3.3 Possible derivation of *tough*-constructions involving a degree ADVP.

Under this alternative analysis, deriving the new data involving DegADVPs is now possible. I will show the full derivation of (26a) of chapter 4 (repeated here as (20)) according to my analysis:

(20) John is too easy to steal books from to hire

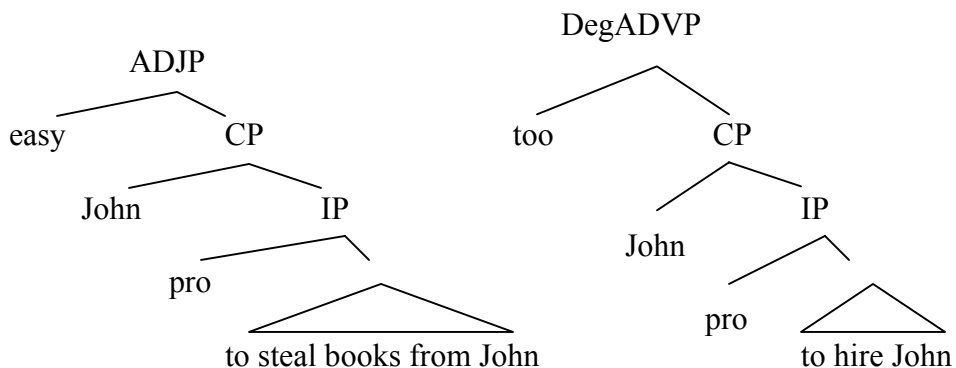
First, the CP (which eventually is the complement of the degree ADV *too*) is built and then merged with the degree ADV *too*:

(21) [too [John [pro [to hire John]]]]



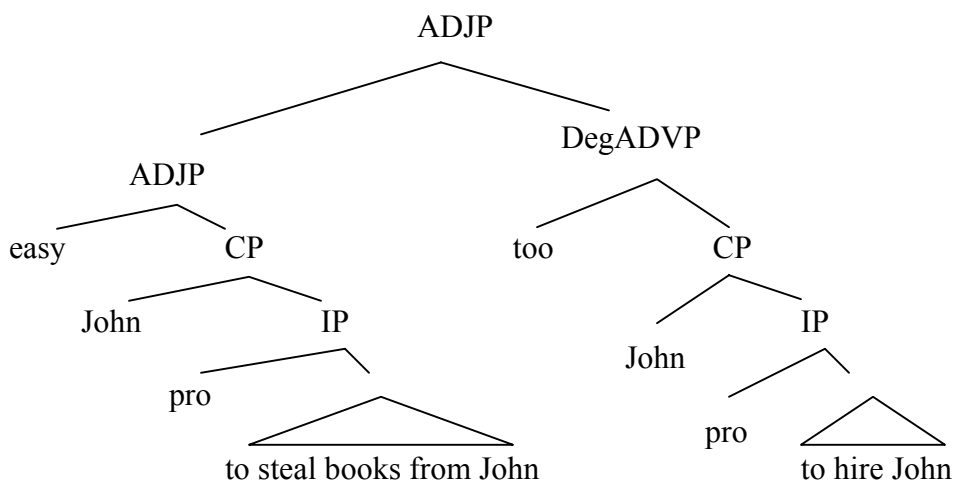
Next, the CP that is the complement of the *tough*-ADJ is built and then merged with the *tough*-ADJ (*easy* in this case).

(22) [easy [John [pro [to steal books from John]]]]
 [too [John [pro [to hire John]]]]



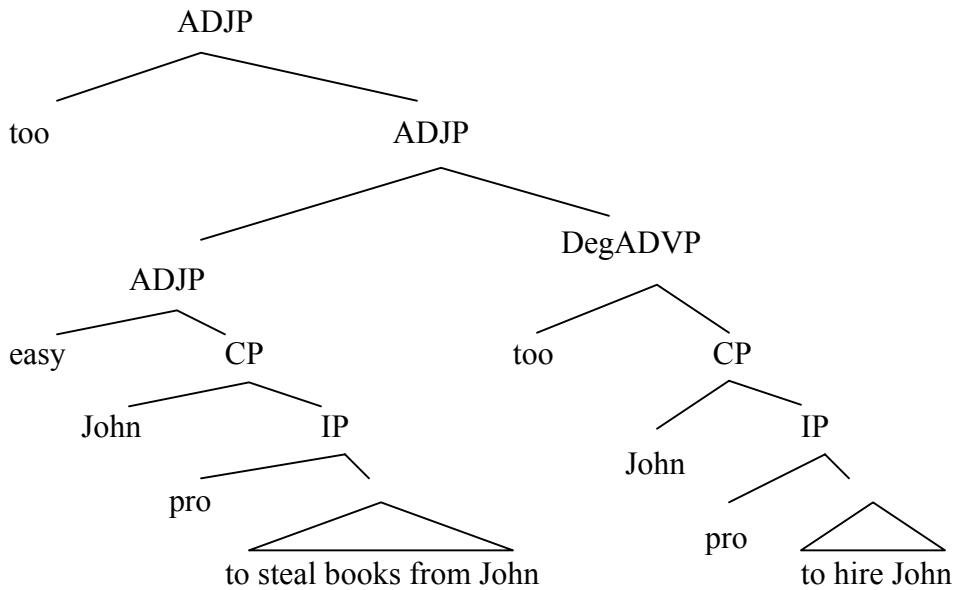
These two phrases then merge, creating a complex ADJP.

(23) [_{ADJP} [easy [John [pro [to steal books from John]]]]] [too [John [pro [to hire John]]]]]



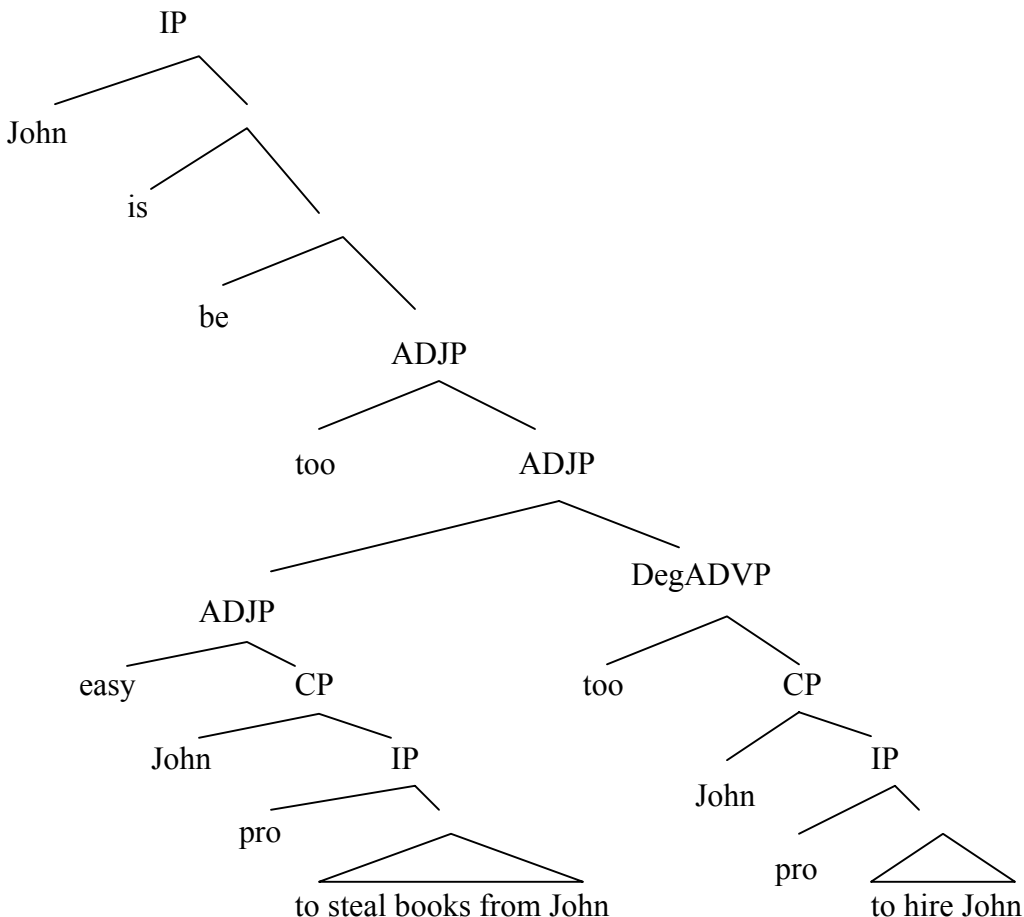
Too raises to the spec of this complex ADJP.

(24) [_{ADJP} too [easy [John [pro [to steal books from John]]]] [too [John [pro [to hire John]]]]]



From this point, the matrix IP is built just as before, with the complex ADJP as the predicate. V is merged first, then I; then *John* is raised to Spec IP. *John moves* to Spec IP to check its [+nom] case features and to satisfy the EPP.

(25) [IP John [is [ADJP too [easy [John [pro [to steal books from John]]]] [too [John [pro [to hire John]]]]]]]



Note also that this derivation provides an explanation for the constituency of the complex ADJP that can be shown through standard tests:

(26) a. Movement:

I said that John is [too easy to steal books from to hire] and [too easy to steal books from to hire] he is too easy to steal books from to hire

^ _____ |

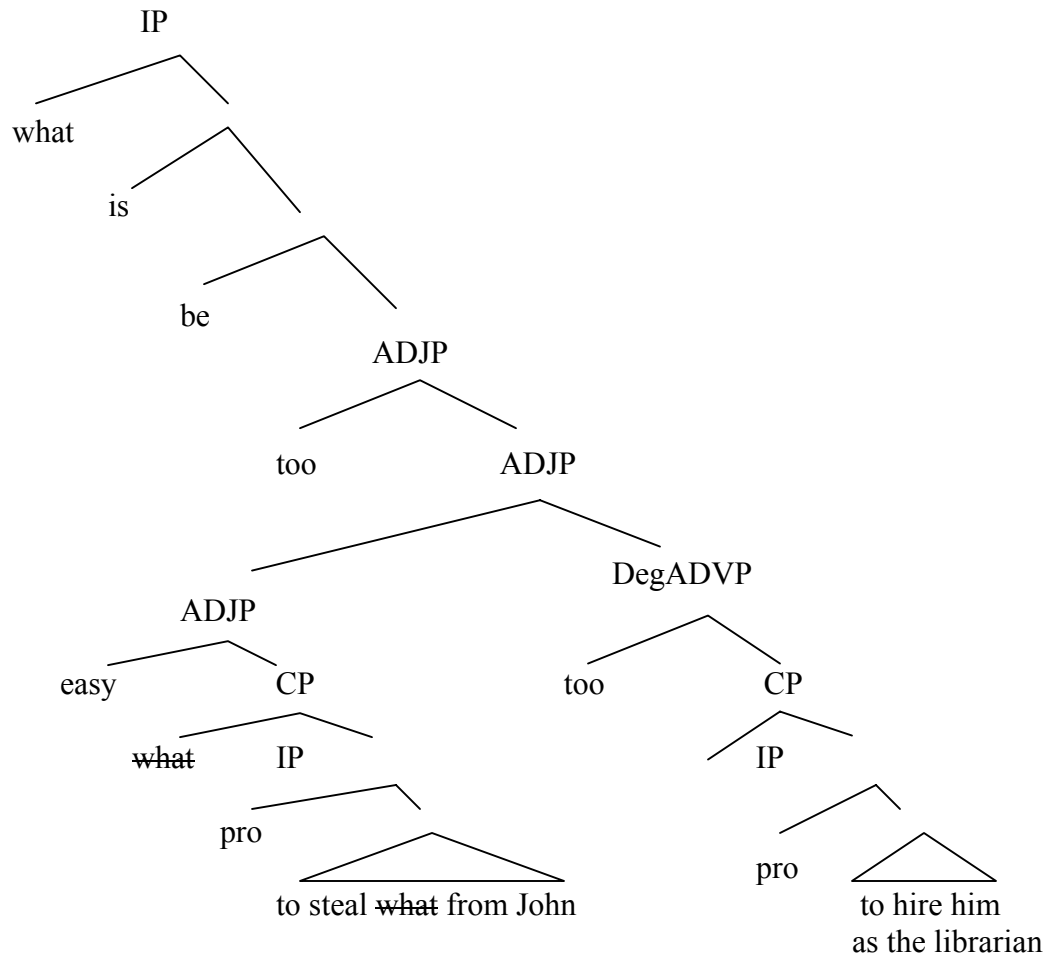
b. Ellipsis/Deletion:

John is [too easy to steal books from to hire], but Mary is not [too easy to steal books from to hire]

object *John* has not already moved out of this CP, then, movement of a wh-phrase is allowed since SpecCP is an available landing site for such a wh-phrase. Put simply, only one item may occupy SpecCP regardless of whether it is an original or a copy. Once this position is occupied, another lexical item may not move into it.

If it is reasonable that a limitation on wh-extraction is reducible to a wh-island effect in (31), then this explanation can be expanded to the *tough*-constructions involving degree ADVPs. If in (31) the ADJP *easy to steal books from John* is modified by the degree ADVP *too to hire him as the librarian*, then it should be possible to replace the D/NP *books* with a wh-phrase and extract it out of this CP to ultimately land in the matrix subject position. In fact, that is what we find as seen in (32):

(32) What is too easy to steal from John to hire him as the librarian



5.4 Parasitic gaps and the new data

5.4.1 Brief overview of the resemblance

There appears to be a striking resemblance between the new data and parasitic gap constructions:

- (33) a. Which report did John file *t* without reading pg ?
 b. This report is [too [easy to file *t*] to read pg]

[For ease of illustrating the parallelism in these examples, *t* is used as notation for trace and pg for parasitic gap despite the ultimate goal of treating these traces and gaps as copies of the matrix DP.]

The gap in the “main” clause is not dependent upon the presence of the lower adverbial:

- (34) a. Which report did John file t ?
 b. This report is too easy to file t

We can conclude, then, that in both the expressions in (34), movement from the object position of the CP to the matrix subject position (through some sequence of movement) is allowed. This is expected from the data we have seen already in chapter 4 and in §5.2 of this chapter. The DP/NP (*which report* in (34a) and *this report* in (34b)) moves from its original position to spec CP, then further raises to Spec IP of the matrix clause to check case features and satisfy the EPP. As we will see, checking case features in this position is important to the explanation of the ungrammaticality of the expressions in (35):

- (35) a. *What did John file every report without reading t
 [^] _____|
 b. *What is too easy to file every report to read t
 [^] _____|

The parasitic gap within the adverbial adjunct is dependent upon the presence of the real gap. Additionally, movement from the pg position to the real gap position appears to be disallowed:

- (36) a. *John filed every report without reading t
 [^] _____|
 b. *It is too easy to file this report to read t
 [^] _____|

The data in both (35) and (36) contribute more useful information as to how these data are derived. Nonlocal movement out of an adjunct appears to be disallowed (by 35)). But in (36), local movement out of an adjunct appears to be disallowed also. If this is so, how is the empty object position of an adjunct ever understood logically as coreferenced with a matrix subject? Under the construal-as-movement analysis I have presented here, an explanation for this behavior must be explained through feature-driven movement.

Can this single feature-checking, then, be the explanation for the parasitic gap-like effects observed in *tough*-constructions involving degree ADVPs?

(39) (21) reproduced [too [John [pro [to hire John]]]]

In (39), the degree ADVP was built first, with the object *John* first in object position, then raising to SpecCP. Presumably the only reason for this move is because *John* holds [+nom] case features that cannot be checked in any existent position in the derivation thus far. Crucially, this ADVP will become an adjunct as soon as it is merged with the *tough*-ADJP. Because of this, *John* must sideward move out of this ADVP and into what will eventually be the *tough*-ADJP before the merge of the ADVP and the *tough*-ADJP. In this object position, the [+nom] case features still cannot be checked and, in fact, cannot be checked in this infinitive CP in any position. The object that originates in the degree ADVP, an adjunct, must move through the ADJP to reach the matrix subject position but can never stop in this position because it holds active case features that can only be checked in the matrix subject position. The “parasitic gap” (i.e., the DP/NP’s original position where [+nom] can never be checked) is dependent upon the existence of the “real gap” (i.e., the position the DP/NP must move through but where the [+nom] case features also can never be checked), then, because the “real gap” must be available as an intermediate landing site for the DP/NP in order for movement out of the parasitic gap to ever have occurred. Additionally, the real gap must never be the landing site for the object of the ADVP because the very feature motivating the movement out of the ADVP ([+nom] case features) can never be checked in the ADJP.

How can this hypothesis be tested? We can tease apart whether this hypothesis is sound by using the grammaticality judgments of two possible expressions ((40) and (41)) by native English speakers.

(40) It is too_{ADJP}[hard_{CP}[IP[pro to find the missing child]]_{ADVP} [the missing child to
[^] _____ |
 sleep]]]

(41) Tommy is too_{ADJP}[ADJP[easy_{CP}[Tommy_{IP}[pro to find Tommy]]]]_{ADVP}[too_{CP}[Tommy
[^] _____ [^] _____ [^] _____ |
 IP[pro to play hide-n-seek with Mary]]]]

In (40) and (41) are the two contrasting examples needed to test this hypothesis. In (40), the DP *the missing child* holds the case feature [+nom] but never originates or lands in a position where this can be checked. To prevent the undesired interpretation of this expression of *the missing child* as the object of the lower CP, the intransitive verb *sleep* is used. The expression in (40) therefore should be judged as ungrammatical. In (41), however, the DP/NP *Tommy* moves until it can check its [+nom] case features, and the expression should converge. *Tommy* is active and holds [+nom] case features in the subject position of the CP contained in the ADVP. *Tommy* moved out of this subject position and into the object position of the *tough*-ADJP CP, checking the internal theta-features of the verb *find*. But since *Tommy* cannot check its own [+nom] features in this position, *Tommy* remains active, forcing the eventual movement to the matrix subject position. Once this position is achieved, all of *Tommy*'s features are checked and the expression converges. If (41) is judged as being grammatical by native speakers, *Tommy* should be able to be interpreted semantically as the object of *find* and as the matrix subject.

All the native speakers questioned (9 in total) found (40) to be soundly ungrammatical. In judging (41), all but one of the native speakers found this expression grammatical, leading me to conclude that this hypothesis is sound.

5.5 Questions for future investigation

5.5.1 Movement through SpecCP

It still remains to be explained why an object, before it moves out of a CP, must pass through SpecCP. Without this constraint, a host of overgeneration will occur, as demonstrated by the examples in §4.3.2 regarding limitation on wh-extraction. All wh-island effects will be lost, as well, if necessary movement through SpecCP of wh-phrases and other extracted phrases is eliminated without another suitable explanation. Yet, nowhere in the analysis that I have proposed here is a feature in SpecCP that would motivate the movement of the D/NP in the object position to obligatorily move into this position.

Locality under minimalist methodology can be conceived of as a natural byproduct of attracting the closest item that can check a feature. We can conceive of a lexical item being “too far” in a new light by stating that another item matching in active features is simply closer to the attractor. Yet, this simplicity also does not answer the hard question of why an item must move to SpecCP. For example, under my analysis of *tough*-constructions in §5.2, no lexical item that matches in features appears to intervene between the matrix subject position and the object position in the infinitive CP. Yet, the analysis relies heavily upon the assumption that the object does in fact move through SpecCP to explain the limitation on wh-extraction.

5.5.2 Sideward movement

Sideward movement is assumed in the analysis presented here as an unavoidable necessity in order to derive the new data of *tough*-constructions involving degree ADVPs. Yet, sideward movement poses theoretical implications that have yet to be explained or understood.

In regards to the prior discussion about movement to SpecCP, sideward movement poses a potential problem. If no feature is checked in SpecCP, then why wouldn't the D/NP in object position move directly from that position via sideward movement to another syntactic tree? There is nothing inherent to sideward movement that would prevent such free movement.

Potentially, the freedom of sideward movement without any constraints results in the loss of historically traditional locality constraints. If sideward movement is available as an operation all the time on equal standing cost-wise with traditional "intra-arboreal" movement, nonlocal movement becomes freely available. Locality can no longer be defined in terms of c-command. Additionally, the Probe-Goal analysis of Chomsky (2000) is unavailable in any operation involving sideward movement.

For these reasons, I propose that sideward movement be a costly operation. The questions of how costly and why it is more costly than other types of operations is well beyond the scope of my inquiry here. But if this operation is identified as costly, perhaps this puts tentative limitations on its free usage when the results are undesirable.

5.6 Summary

The analysis I present here adopts the advantages of the construal-as-movement analysis of Hornstein (2001) but makes crucial revisions to the *Move!* analysis in order to solve its shortcomings, detailed in chapter 4. Of note in the present analysis is that I have

demonstrated that the infinitive CP in *tough*-constructions is the sister to the *tough*-ADJ, creating a larger ADJP. I also have concluded that *tough*-movement is a result of a [+nom] case feature on the object in the infinitive CP that can only be checked in the matrix subject position. This [+nom] feature also can explain the parasitic gap-like behavior of *tough*-constructions involving degree ADVPs.

Notes:

1. In considerations of Economy, it should be possible that sideward movement occur as soon as possible in a derivation since there are no issues with locality (i.e., neither c-command nor subjacency play a role in determining whether something can sideward move). Yet, if this occurs, overgeneration of data, such as wh-island extraction violations, will occur.
2. Hornstein did consider other reasons for movement to Spec CP before moving out of the CP. He stated that the mechanism responsible for movement of the DP/NP out of the CP is similar to that found in relative clauses, namely, Promotion.
3. I have simplified this derivation considerably in the interest of staying to the point. As per Chomsky (1995) (chapter 3), the [+acc] case feature of *him* is checked by Agr_o , and then *him* moves to the object position of *find* to check its theta-features.

CHAPTER 6

SUMMARY

In this thesis, I have reviewed previous analyses of *tough*-constructions in English and sought in my own analysis of the data to resolve the problems of these other analyses. My analysis, in chapter 5, relies heavily upon the concept of construal-as-movement as the instrument by which to eliminate the PRO theorem and control from the theory in pursuit of minimalist goals. In a sense, I attempted in this analysis to bring old and new together. We have taken a look at old data that has thrown wrenches into the theoretical works for decades and new data that has never been considered before. My analysis here has taken an old idea, construal-as-movement, and utilized its strengths to achieve minimalist goals.

Fortunately for me, the body of information that includes speculations on possible derivations of *tough*-constructions is enormous. My task of conceiving *tough*-constructions as being derived via construal-as-movement was somewhat a process of elimination. My predecessors provided most of the ideas as well as many of the problems with these proposals. The new data presented here (*tough*-constructions involving degree ADVPs) provided me with a few more hints about how *tough*-constructions could be derived. Specifically, the new data posed the challenge of presenting not just one but two positions in the expression that were necessarily co-referential with the matrix subject. Such a phenomenon demanded that the movement sequence of the ultimate matrix subject successfully account for this coreference.

By no means have I tied up all the loose ends that these data present. As discussed in chapter 5, much remains to be investigated with regard to sideward movement and with regard to so-called wh-movement, that is, obligatory movement of an element through SpecCP during the course of a derivation. Both of these concepts I used as needed within my analysis, and I treated them as accepted machinery within the theory. But in the strictest terms, I have neither justified their existence in the theoretical framework nor examined the problems either presents for data not covered in this thesis. I chose to leave these problems strewn about and unsolved here rather than propose solutions that compromised the goal of pursuing the simplest explanation.

REFERENCES

- Akmajian, Adrian. 1972. "Getting Tough." *Linguistic Inquiry* 3 (3): 373-377.
- Bošković, Željko, and Steven Franks. 2000. "Across-The-Board Movement and LF." *Syntax* 3 (2): 107-28.
- Bresnan, Joan. 1972. *Theory of Complementation in English Syntax*. Doctoral dissertation, Department of Linguistics and Philosophy, Massachusetts Institute of Technology.
- Brody, Michael. 1993. "Theta-theory and Arguments." *Linguistic Inquiry* 24 (1): 1-23.
- Browning, Maggie. 1987. *Null Operator Constructions*. Doctoral dissertation, Department of Linguistics and Philosophy, Massachusetts Institute of Technology.
- Chomsky, Noam. 1964. *Current Issues in Linguistic Theory*. The Hague, The Netherlands: Mouton de Gruyter.
- Chomsky, Noam. 1977. "On Wh-movement." Pp. 71-132 in *Formal Syntax*, ed. P. Culicover, T. Wasow, and A. Akmajian. New York: Academic Press.
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht, The Netherlands: Foris.
- Chomsky, Noam. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Linguistic Inquiry Monograph 6. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1986. *Barriers*. Linguistic Inquiry Monograph 13. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. "Derivation by Phase." Pp. 1-52 in *Ken Hale: A Life of Language*, ed. M. Kenstowicz. Cambridge MA: MIT Press.
- Collins, Chris. 2002. "Eliminating Labels." Pp. 42-64 in *Derivation and Explanation in the Minimalist Program*, ed. S. Epstein and T. Seely. Oxford, UK: Blackwell.
- Epstein, Samuel D. and T. Daniel Seely. 2002. "Rule Applications as Cycles in a Level-Free Syntax." Pp. 65-89 in *Derivation and Explanation in the Minimalist Program*, ed. S. Epstein and T. Seely. Oxford, UK: Blackwell.

- Franks, Steven. 1993. "On Parallelism in Across-The-Board Dependencies." *Linguistic Inquiry* 24 (3): 509-529.
- Hornstein, Norbert. 2001. *Move! A Minimalist Theory of Construal*. Oxford, UK: Blackwell.
- Jackendoff, Ray. 1977. *X-bar Syntax: A Study of Phrase Structure*. Linguistic Inquiry Monograph 2. Cambridge, MA: MIT Press.
- Jones, Charles. 1991. *Purpose Clauses: Syntax, Thematics, and Semantics of English Purpose Constructions*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Lasnik, Howard and Robert Fiengo. 1974. "Complement Object Deletion." *Linguistic Inquiry* 5 (4): 58-89.
- Lasnik, Howard and Juan Uriagereka. 1988. *A Course in GB Syntax*. Cambridge, MA: MIT Press.
- Lasnik, Howard. 1999. *Minimalist Analysis*. Oxford, UK: Blackwell.
- May, Robert. 1983. "Autonomy, Case and Variables." *Linguistic Inquiry* 13 (1): 162-167.
- Munn, Alan. 1992. "A Null Operator Analysis of ATB Gaps." *The Linguistic Review* 9 (1): 1-26.
- Nunes, Jairo. 2001. "Sideward Movement." *Linguistic Inquiry* 32 (2): 303-344.
- Postal, Paul M. 1993. "Parasitic Gaps and the Across-The-Board Phenomenon." *Linguistic Inquiry* 24 (4): 735-754.
- Ross, J. 1967. "Constraints on Variables in Syntax." Doctoral dissertation, Department of Linguistics and Philosophy, Massachusetts Institute of Technology.
- Safir, Ken. 1984. "Multiple Variable Binding." *Linguistic Inquiry* 15 (4): 603-638.
- Seely, T. Daniel. 2000. "On Projection-Free Syntax," Ms, Eastern Michigan University.
- Wasow, Thomas. 1977. "Transformations and the Lexicon." Pp. 327-360 in *Formal Syntax*, ed. P. Culicover, T. Wasow, and A. Akmajian. New York: Academic Press.
- Williams, Edwin. 1977. "Across-The-Board Application of Rules." *Linguistic Inquiry* 8 (2): 419-423.
- Williams, Edwin. 1978. "Across-The-Board Rule Application." *Linguistic Inquiry* 9 (1): 31-43.

Williams, Edwin. 1983. "Semantic vs. Syntactic Categories." *Linguistics and Philosophy* 6: 423-446.

Williams, Edwin. 1986. "The ATB Theory of Parasitic Gaps." *The Linguistic Review* 6 (3): 265-279.